CONVERT YOUR OLD MAC INTO A JUKEBOX p. 58

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– ***David Pogue***, The New York Times

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– ***Michael Gartenberg***, Computerworld

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All readers now have free access to the contents of the CD-ROM that comes with some copies of *Macworld*. To view the contents of the CD, go to the following URL (broadband Internet recommended): **http://cd.macworld.com/2005/09/micro-bagel**

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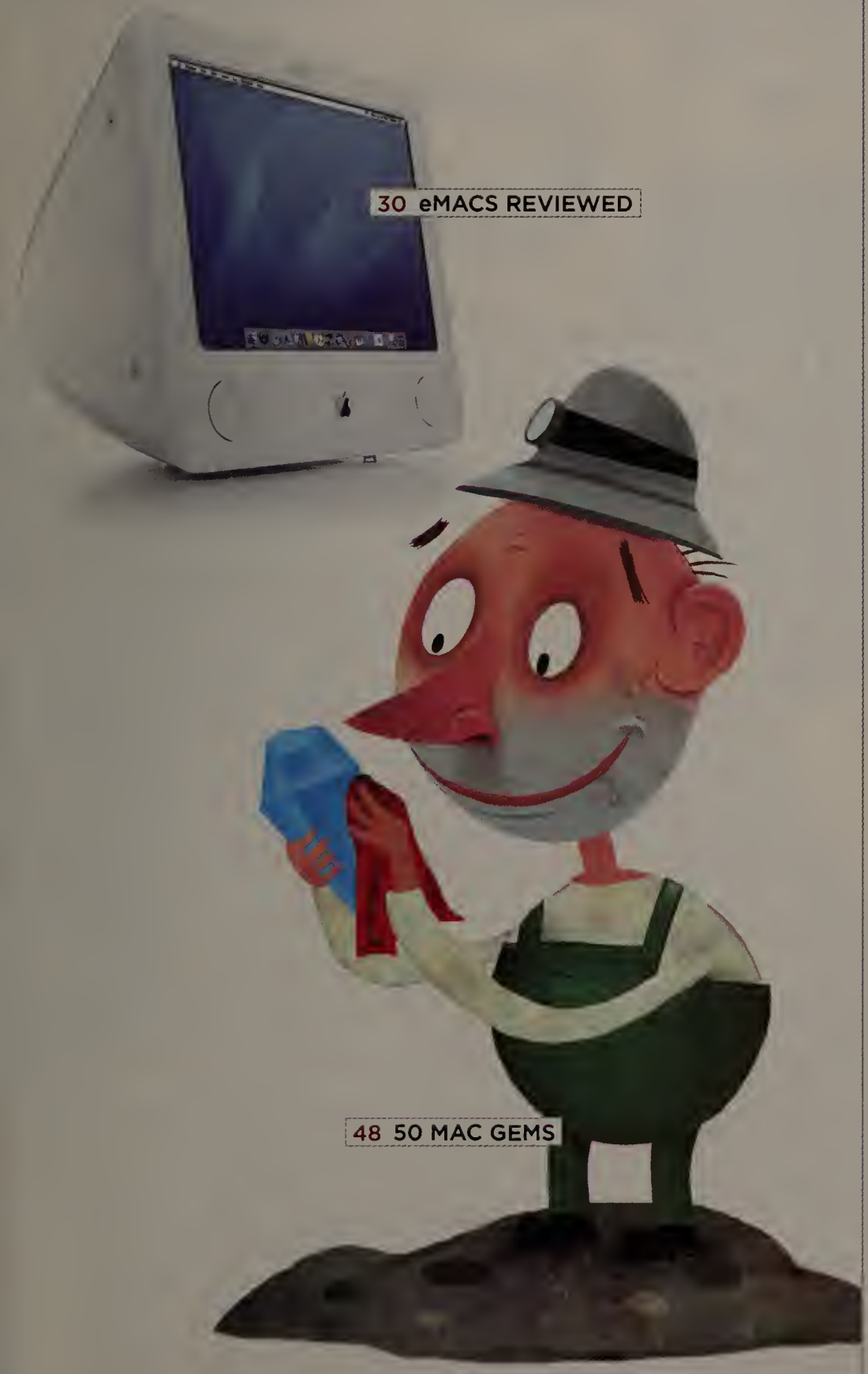

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Check out our favorite new stuff.

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Wi-Fi World

On a warm, sunny day, we stepped off of our cruise ship and onto dry land in Tallinn, the capital of Estonia. A small nation (with fewer than two million people) on the Baltic Sea, Estonia spent 50 years after World War II as an unwilling part of the Soviet Union. But in the past ten years, things have really changed in Estonia. And not surprisingly, computer technology is a big part of that change.

Clear Horizons

Tallinn was one port of call during the most recent MacMania cruise (www.geekcruises.com), an event co-sponsored by this magazine. Before my visit, *Macworld* contributor Cyrus Farivar recommended that I visit with Veljo Haamer, who runs wifi.ee, an organization that is spreading wireless Internet hotspots throughout Estonia, particularly in Tallinn.

Veljo led me through this gorgeous city via back streets, avoiding crowded, touristy areas and steering me toward his favorite spots. We ascended a hill that provided a view of much of the city—and overlooked many examples of Veljo's work. He pointed out two beautiful parks next to the Estonian parliament building; both will be enabled with free wireless Internet access by the time you read this.

We ended up at Pegasus, a trendy café that resembled nothing more than an Apple Store. (No, there are not yet any *official* Apple Stores in Estonia.) Pegasus also offers free Wi-Fi access. Some of the cafés in town charge a nominal fee for access: less than $1 for 24 hours. But most of these venues seem to believe that free Wi-Fi is like free newspapers: It keeps patrons happy and in the café, spending money.

Before reaching Estonia, I had told several of my fellow cruisers about my planned visit with Veljo. They all seemed fairly skeptical about the state of technology in this former Soviet republic—surely, Estonia would still be a technological backwater.

But that's not the case at all. Just as most of Europe has embraced wireless Internet access and other mobile technology, Estonia has embraced Europe. On the large scale, you see it in the country's new membership in the European Union, in the fact that many Estonians have not one but *two* mobile phones (and have ditched their land lines), and in the growing number of Estonians who eschew dial-up Net access in favor of free Wi-Fi. On the small scale, you see it in people like Veljo, working hard to bring wireless Internet access to the whole of his small country, one park at a time.

⌘ Performance

Walking through the city, we passed a beautiful Orthodox church. A sign on its wall identified it as a national monument, and in the sign's center was the same ⌘ symbol you'll find on your Mac keyboard, right next to the Apple logo. I'd heard that Apple had appropriated the ⌘ symbol from a Scandinavian sign indicating a "place of interest"—and now I've got proof.

After our tour, Veljo and I met up with his friend Meelis Piller, the founder of the Estonian edition of *PC World*. Meelis's group is very small, but they've just put out their second issue and are competing well with two other computer magazines in Estonia. Meelis says that Estonia has a growing number of Mac users (he uses a PowerBook himself). In fact, the cover of the Estonian *PC World* features an Apple logo and the phrase *"Nüüd ka Maci kasutajatele!"*—loosely translated, "Now covering the Mac, too!" Sure enough, inside are an article about the Intel transition and a feature story about Tiger.

Warm sun, friendly people, and free and fast wireless Internet access: I had an excellent time in Tallinn. As travel writer Rick Steves says, travel is about broadening your horizons and seeing the world from different perspectives. Tallinn showed me that when you're broadening your horizons, you should bring your PowerBook. You're liable to find wireless Internet access and Mac fans, even in the unlikeliest of places. □

For more information about forthcoming MacMania cruises to Mexico and the Mediterranean, visit www.geekcruises.com. For more from the MacMania Baltic cruise, visit macworld.com/topics/macmania. Got a comment? E-mail jason_snell@macworld.com or visit our online forums: macworld.com/forums.

Wireless in Estonia Veljo Haamer (right) and Jason Snell at one of Tallinn's Wi-Fi cafés.

PORTRAIT BY PETER BELANGER

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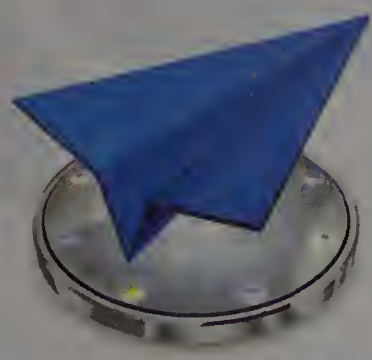

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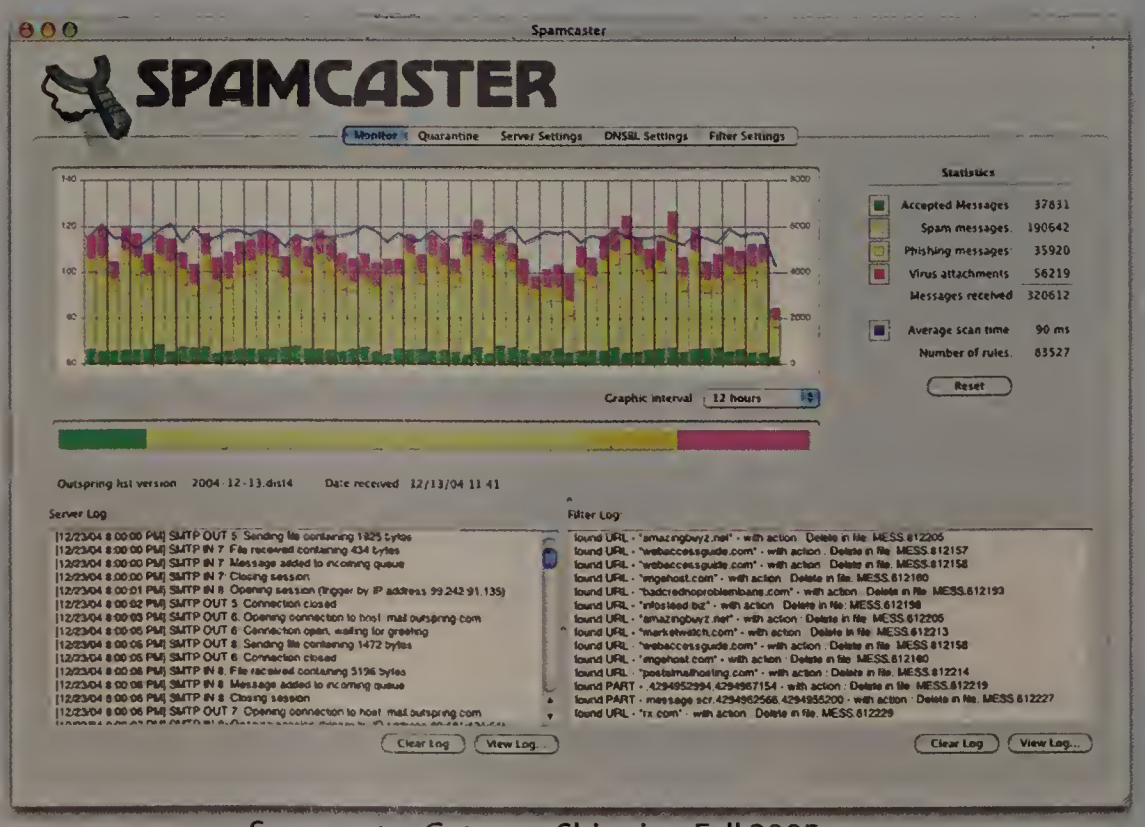

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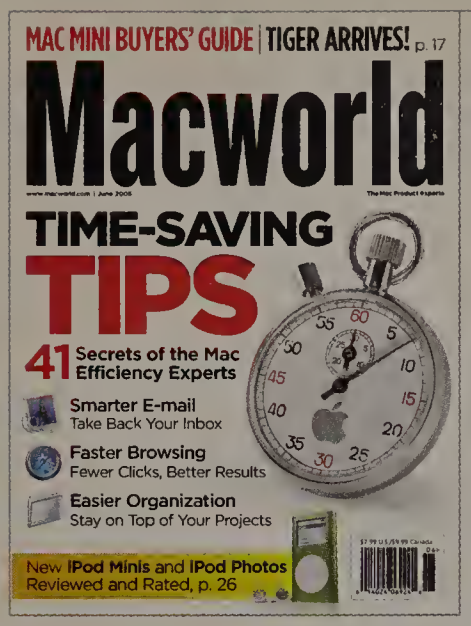


FEEDBACK

The Rights Stuff

Nothing gets Mac users more riled up than copyright law. (Well, except maybe the word *Intel.*) In June's *From the Editor's Desk* column, Jason Snell braved the intellectual-property debate—and the letters started pouring in. Some were reasonable. Some made us consider calling the FBI. But almost all of them reminded us that there's no easy solution in sight for balancing the rights of two groups of people: those who create music, movies, and other artistic endeavors, and those who want to enjoy these creations.

Who Owns Your Music?

MIKE McFERRON

Regarding Jason Snell's column ("All Rights Reserved," *From the Editor's Desk*, June 2005): I think it demonstrates a surprising misunderstanding of intellectual-property rights. Throughout his article, he implies that when a person purchases software, a CD, or a DVD, that person owns the application, music, or movie. This is simply false. When someone purchases an audio CD, he or she owns the CD—not the intellectual property on the CD. That information belongs to the copyright holder. Unfortunately, Jason Snell's view is a common one today.

If you want your own music, write it yourself. After you have sacrificed in this way, you can give your music away. Pirates can try to justify piracy all they want, but in the end they're only advocating theft. Following Snell's logic, as a subscriber to *Macworld*, I should be able to scan his article and post it on my Web site—but wait, take a look at the copyright notice on page 10 of that issue.

I never suggested that consumers own the copyright to what they buy. However, I do believe that consumers have some fundamental usage rights, and that many content publishers want to reduce or eliminate consumer freedom. For example, when I buy a CD, I believe that I have the right to convert the music on that CD to MP3s and put it on my iPod, or to burn mixed CDs of the songs in my collection for my own personal use. By your reasoning, none of these things should be legal. Not even the music companies hold that position, which is just as ridiculous as the pirates' belief that there's no such thing as intellectual property.—Jason Snell

LARRY PLACHNO

As a magazine and book publisher, I'm in the middle of this copyright debate. On the one hand, if we're worried about software or hardware that can make illegal copies, we should also eliminate copy machines, scanners, and audio recorders. We might even want to take a good, hard look at pens, pencils, and chalk. On the other hand, there are any number of items (musical works, publications, books, videos, and even medicines) that cost money to develop but are also relatively easy to copy. The people who develop and produce these items should be paid for their development costs. Paying the proper price encourages them to produce more; illegal copying discourages them.

No Enhancement

MICHAEL MALOUF

I was excited to learn about Safari Enhancer ("Secrets of Mac Superheroes," June 2005). But you failed to mention that it doesn't work with Safari 1.3; according to the Enhancer Web site, trying to do so could really screw up Safari.

According to the Safari Enhancer site, the utility has since been updated so it now works only with Safari 2.0 in OS X 10.4.—Ed.

KYOU

DANNY LEMOS

I had just said to a friend, "How do I get into Podcasting?" when I opened the June issue and found your article ("Start Your Own Podcast," *Create*, June 2005). Bravo! I was setting up my first Podcast in a heartbeat. As a former radio broadcaster, I'm excited that I can just turn on my iMac and be up and running.

Bye-Bye, Passwords

HENRY B. LEDYARD

Your short story about biometric security devices ("Put Your Finger Here," *Mac Beat*, June 2005) is the best news since the mouse. Think of the possibilities: secure and personal identification for accessing one's medical records and credit information, online voting, and online shopping without fear—and I could pitch my little black book with all those login names and passwords.

What Month Is It?

CHRIS LUTH

I know this has been brought up before, but now the magazine industry has reached a new low. I received my latest *Macworld* in the mail today—the June issue. Page 17 has an announcement that says Tiger *will be* available on April 29th ("Tiger Arrives," *Mac Beat*, June 2005). What? The future tense regarding a date that was more than a month prior to the issue date? I know the magazine industry is competing to maintain a sense of timeliness in this instant-news era, but this is beyond me.

Classic Lighting

BOB JOHNSTON

As someone who started way back with an Apple II+ and a Mac 512K, and who has been through numerous upgrades since, I'm a true Apple fan. My wife and I wanted

to do something unique and different with two Mac Classics (one belongs to a friend) that were collecting dust. We didn't want to throw

them away, but thought that a Mac Classic night-light would make a nice touch on our desk. Each Mac Classic was gutted and sanded, had light holes drilled, and was painted. Blue plastic was placed over the monitor and floppy-drive openings. Finally, the Apple logo was painted to finish the project. Total crafting time per Mac was about eight to ten hours.

Mac = Windows Wannabe

LES SIMON

After fifteen or so years of using a PC, I switched to a Mac. A year later, I'm still adjusting to the switch. But I'd like to thank Apple tech support and *Macworld* for all their help in making the switch as free of hassles as possible. In general, *Macworld* is loaded with useful information, much of it about small apps that cost less than $100. But this can mount up quickly, adding to the cost of an already high-priced system. Using Windows was frustrating, yes. But practically every time-saving app I've read about in *Macworld* adds a feature built into Windows—at no extra cost. It seems that many Mac users (myself included) want Windows capabilities with Mac reliability.

Noisy Debate

WAYNE MITZNER

Regarding the letters you've been publishing about excessive fan noise in iMac G5s, you should also look into the noise of the 12-inch PowerBook G4s. Users in Apple's support forums say that a change to a file (AppleADM103x.kext) in the upgrade from OS X 10.2 to 10.3 caused the fan to stay on nearly all the time. In addition to the noise, this also cut my battery time by about 40 percent. Reinstalling the old file from OS X 10.2.8 into 10.3 solved the problem for me. But that may not work in Tiger—preventing owners of 12-inch PowerBooks from ever upgrading to OS X 10.4. Please check this out.

RON CONNOR

In June's *Feedback*, a reader commented on the noticeable fan noise the G5 tower makes. I had the same problem and found one solution that worked well for me. In the Energy Saver preference pane, select the Options tab, and then choose Highest from the Processor Performance drop-down menu. Restart the computer, and you'll notice a dramatic drop in fan noise.

Make iTunes Better

ERIC POLLITT

I have a suggestion for improving iTunes. I know I can tell it to use specific equalizer settings for each song. But I think it'd be more Apple-like if iTunes automatically based its equalizer settings on each song's genre—so it'd choose Pop for Michael Jackson, and Rock for R.E.M.

Post comments on our forums (www.macworld.com); send them by mail to Letters, *Macworld*, 501 Second Street, 5th Floor, San Francisco, CA 94107; or send them by e-mail to letters@macworld.com. Include a return address and daytime phone number. Due to the high volume of mail we receive, we can't respond personally to each letter. We reserve the right to edit all letters and posts. All published letters and forum comments become the property of *Macworld*.

Tuning Up 10.4

Like Any New OS, Tiger Has Its Share of Problems

ILLUSTRATION BY DAN SANTAT

BY JIM DALRYMPLE

The anticipation for Tiger was obvious from the crowds of people waiting to get their copies of the latest Mac OS at Apple's retail stores. With the $129 OS X 10.4, Apple has given users access to some of the most innovative technologies on the market today—floating widgets, simple automation, high-quality video chat, truly integrated searching, and more. But there are always a few glitches in a major OS release—and Tiger is no different.

While the switch to Tiger was smooth for many people, others were left without the ability to use some basic functions. Like many of those people, I was affected by problems with .Mac syncing—it flat-out didn't work on one of my upgraded machines.

Apple's .Mac syncing has moved from the iSync application to the .Mac preference pane, going from an application-based service to a more intuitive, integrated model. The technology was almost completely overhauled in Tiger, and there are some kinks to work out. (The new iSync 2.0 has its own share of problems, with some people not being able to properly sync many cell phones and Palm OS PDAs. You can read about some of the issues that users are reporting on Apple's online discussion boards at discussions.apple.com.)

Another problem I had was that Keychain Access didn't allow some services to remember my passwords. A quick search of Apple's support Web site showed that I wasn't alone—unfortunately, there also appeared to be no

solution. But I updated several Macs to Tiger, and only one had the Keychain problem. This illustrates one of the strange things about updating an operating system: a bug that affects one user may not affect another with a similarly configured machine. As frustrating as many of these problems are, Apple realistically can't make everything work perfectly on every Mac—there are just too many variables, such as third-party software.

Dashboard Security

In addition to various bugs, there are some larger problems with Tiger's new features. Aside from Spotlight, Dashboard has been the most touted feature in Tiger (you can read *Macworld* Editorial Director Jason Snell's in-depth analysis of Dashboard at macworld.com/0590). Shortly after Tiger's release, a security-related Dashboard glitch arose that could have been exploited by so-called malware developers.

Safari 2.0's default Open Safe Files After Downloading option is meant to save time and effort when you're downloading files. But with that setting active, Dashboard can automatically install widgets if you simply visit a Web page. You can disable this option with a click of the mouse, but a widget could potentially do a lot of damage.

Widgets are owned by the user, and they can do anything a user can. For example, they can remove files from your Home directory without asking permission. They can run any Terminal command that a user can, and they can launch any AppleScript that a user can. Although nobody developed destructive widgets, Tiger was susceptible to them. A situation like this one is where software updates come into the picture.

Software Updates

Less than three weeks after Tiger hit store shelves, Apple fixed many of the operating system's problems, with OS X 10.4.1. The update includes improvements to applications, Dashboard, .Mac and syncing, iLife, and more.

One major change is that you are now warned when you download an image or an archive that contains an application—to complete the download, you must click on the Continue button that pops up in Safari. This prevents any automated widget installation.

The update also addresses several problems with Apple's Mail, including one in which the application could unexpectedly quit, stop responding, or fail to import your previous e-mail messages if third-party software was installed in */your user folder*/Library/Mail/Bundles or /Library/Mail/Bundles. OS X 10.4.1 fixes the problem by preventing previously installed plug-ins from loading.

Better Safe Than Sorry

The first Tiger update fixes several well-known problems, but there will be some more (even after future updates come out). I usually do a complete bootable backup, so I can just plug in my drive and boot my old system if I need to. But I've had more problems upgrading to previous new versions of Mac OS than I've had so far with Tiger—and that says a lot about the quality of Apple's work. □

JIM DALRYMPLE is Macworld.com's news editor.

COMPANIES ADOPT ACTIVATION TO STEM PIRACY

Stop, Thief!

As long as there has been computer software, there have been people who don't want to pay for it. And these days, with fast Internet connections and cheap storage, it's easier than ever to be a software pirate.

The Business Software Alliance (BSA) estimates that, worldwide, piracy costs businesses more than $33 billion.

Developers don't seem to like implementing antipiracy measures, but it's something that they must do to protect their products.

"Fighting piracy is a significant investment for these companies," says Jenny Blank, the BSA's director of enforcement, "but the size of the damages [is] so huge that you have to make this investment."

Striking a Balance

For many companies, the first priority is to make registration and activation easy for the honest user. The second priority is to make those things more difficult for pirates to crack.

"You cannot make software totally immune to piracy—it just doesn't work," says Tobias Thon of audio-application maker Native Instruments. "No antipiracy scheme should punish the people that buy the software."

While large companies may be able to absorb more of the financial losses associated with piracy, smaller companies and their employees feel the loss of every product that is pirated.

"We are a small company, but our employees have families, and they rely on the money they get from us to support them," says Andrew Welch, president of Ambrosia Software.

Al Schilling, the general manager of game maker MacSoft, finds himself in a similar situation. "We're not getting rich at this, and it's getting harder to make a living," he says.

Turning to Activation

Because traditional serial numbers are too easy to pass around, many companies have turned to product activation—a process by which the software contacts a company's server to verify that the serial number is valid, and that it's being used only on the number of systems allowed by the licensing agreement.

Adobe Systems is the latest large company to move its flagship products to an activation model. With the release of Creative Suite 2 in early April, Adobe said it would enforce its long-standing licensing agreement and require that customers activate the software.

"We have been actively monitoring online forums and feedback we receive directly from our customers," says Mihir Nanavati, Adobe's licensing and antipiracy senior product manager. "Typically, it's what we expected—there are segments of our customer base that remain skeptical about activation. On the other hand, there is a lot of renewed interest and awareness on what the license really means."

continues

Nanavati says that a small number of customers have said they will not buy any product that has activation because they don't believe it's a good thing.

Although workarounds to Adobe's activation are already available on the Internet, Nanavati says that Adobe's first concern is its customers, not stopping every person who wants to steal its software.

Native Instruments limits the number of computers that are authorized to run a copy of its software, and activating a product requires registering and then copying an activation code into the product before it can be used. But to make the process easier for users, the company's Web site can show you the authorized computers and the date the application was licensed—and gives you the option to deactivate one computer in order to use the software on another.

"Copy protection should be convenient," says Native Instruments' Thon. "But this is a must for us."

Ambrosia Software has developed a system that includes expiring serial numbers, and Quark uses a two-pronged approach—one targeted at individuals and another tailored to the needs of big businesses.

"Product activation in QuarkXPress for most users is a fairly simple process," says Glen Turpin, Quark's corporate communications manager. "You can activate the software on two systems, so you can have a copy at home and work, for example. For larger organizations, we use a server application called Quark License Administrator that allows concurrent uses of your licenses."

The advantage of Quark License Administrator is that the application can be installed on as many desktops as you like. When the application launches, it will validate itself with the server, and as long as the current number of users doesn't exceed the number of licenses, you can use the application.

Lost Time

While companies may jump on the activation bandwagon out of necessity, it's not always the first choice for developers.

"From a software developer and publisher's point of view, I can't stand having to do this kind of stuff," says Ambrosia's Welch. "Any time that we spend working on the system to protect our software is time we are not spending working on making the product better."

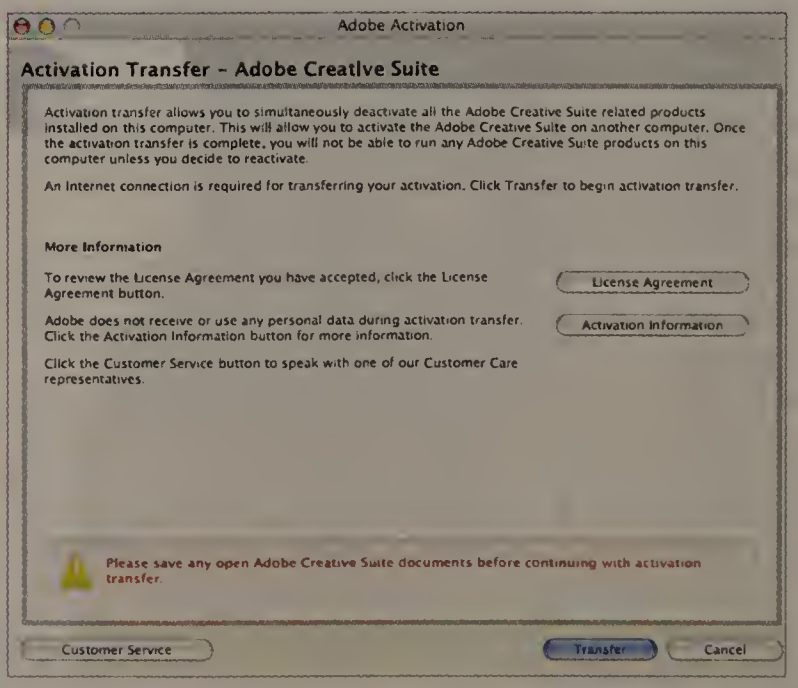
The fact remains that, like it or not, most companies these days feel the need to protect themselves and their products as best they can. So updates don't come out as quickly as people may want them to, and new product development is often put on the back burner while code is written to combat piracy.

"We need to keep innovating on all levels, but we would prefer to focus on technologies that help the customer in their workflow and achieve their business goals," says Quark's Turpin.

An End in Sight?

Realistically, combating piracy requires more than just technology. BSA is working with law enforcement, but as BSA's Jenny Blank points out, it can't tackle the whole Internet. As part of its long-term planning, BSA has developed two programs to help educate students on the ramifications of software piracy. One program targets young children and the other focuses on college students.

"The best thing we can do is to educate consumers," says Al Schilling, MacSoft's general manager. "Hopefully, if we can pierce the public's awareness of the issue, we can get that message out there and effect a change."—JIM DALRYMPLE

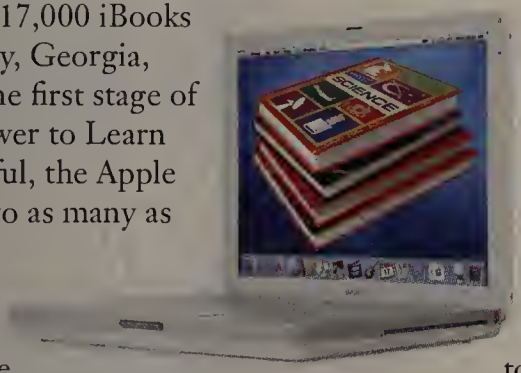


Relatively Painless Adobe makes it easy to deactivate its Creative Suite on one computer and transfer the license to another.

APPLE MAKES DEAL WITH COBB COUNTY SCHOOLS

iBooks for Everyone

Although Apple recently lost out to rival Dell in its bid to reequip students in Henrico County, Virginia, with laptops, the company scored big with a deal to lease more than 17,000 iBooks to the Cobb County, Georgia, school district. If the first stage of Cobb County's Power to Learn program is successful, the Apple deal could expand to as many as 63,000 iBooks.



The idea behind the program is to "help kids who have never been excited about learning before to get excited," says Jay Dillon, the Cobb County School District's public relations director.

Each teacher in the district will receive an iBook, and more than 8,000 Cobb County high school students will also get the new systems during the upcoming school year. (Each school will decide whether students can take the iBooks home with them.)

"We have a total of 14 high schools in Cobb County," says Dillon. "So we're going to pick four of them as demonstration sites."

When generating their request for proposals from laptop-computer vendors, Cobb County school officials researched similar programs around the country and discovered a shortfall of the Henrico County deal—no Microsoft Office applications were included as part of the deal. Apple agreed to install Microsoft Office on all the new iBooks, as well as iLife '05, a graphing-calculator application, and World Book Encyclopedia.

Cobb County received bids from four major laptop makers: Apple, Dell, Hewlett-Packard, and IBM. Although price was an important factor in choosing Apple, Dillon says that there was another, equally important reason.

"The support we'll receive from Apple is a tremendous part of their proposal," he says. Apple will provide Cobb County with a project-management team and will maintain a local repair facility, with the goal of making sure that no student or teacher is without an iBook for more than a day.

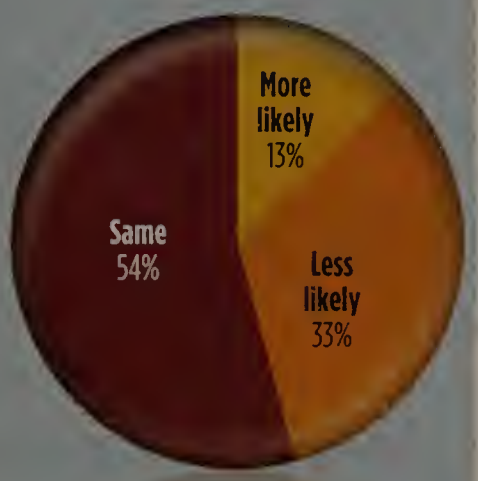
With Apple primarily responsible for supporting the computers, the Cobb County School District's own IT department won't be burdened with having to take care of 17,000 new computers.—PETER COHEN

THE READERS SPEAK

Apple's Intel Switch

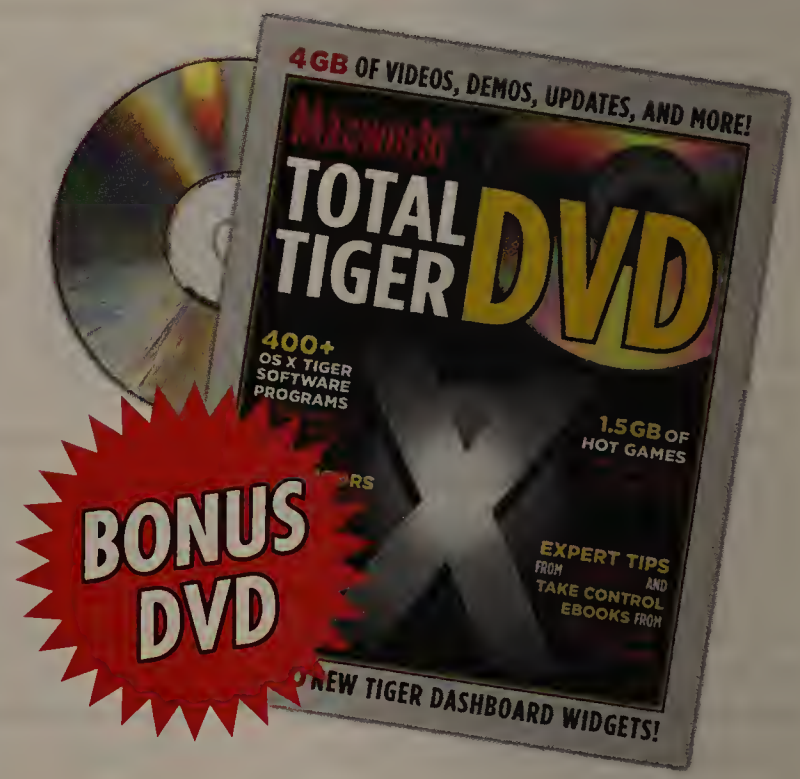
Apple's decision to replace IBM's PowerPC chips with processors from Intel may have long-term benefits for both the company and its customers, but the processor switch could potentially hurt near-term hardware sales, according to a survey of 414 people in the Macworld Reader Panel. Read the complete results at macworld.com/0678.—PHILIP MICHAELS

Are you more or less likely to buy a Mac in the next 12 months given Apple's Intel announcement?



TOTAL TIGER: SPECIAL ISSUE

ON NEWSSTANDS JULY 26TH



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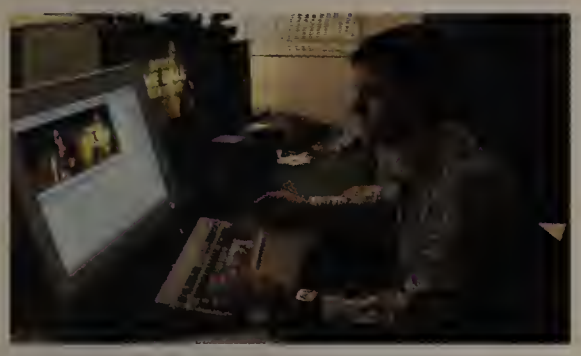
SPIKE TV USES APPLE TECHNOLOGIES FOR SPOTS

On the Ball



When Spike TV (www.spiketv.com) needed to create TV spots to complement its Super Bowl weekend coverage, it turned to John Papola, one of the cable channel's executive producers and directors—and he turned to the Mac. Papola says there was no doubt that he would need Apple hardware and software to get everything done.

Although he's worked extensively with both Macs and Windows PCs, Papola learned to appreciate Apple while creating motion graphics on a PC at MTV.

Papola and another full-time editor put together all 20 of the Spike TV segments. Each decision on the use of technology was crucial. Papola regularly worked into the wee hours of the morning, and he says that the system restarts often required by Windows computers took too much time.

"Even the Windows-based Avid systems exhibit that kind of quirkiness—it just doesn't happen as frequently on the Mac," he says.

In the studio, Papola used Power Mac G5s with Final Cut Pro HD for the majority of the work, but he also took advantage of several other Apple technologies, such as .Mac, iChat, and FireWire.

Papola posted segments to his .Mac account for review by others at Spike TV, and used iChat to send small folders and files—making much of the workflow and discussions about changes very interactive.

"Apple really made it possible for us to come in on budget," says Papola. "Avid can't match that."—JIM DALRYMPLE

CREATIVE BEAT

Carrara 3D Basics 2, from Eovia (www.eovia.com): 3-D–modeling, –rendering, and –animation package for OS X 10.1 and later is a scaled-down version of the more sophisticated Carrara and is aimed at novices ($99).

Cosmic Blobs 1.1, from Dassault Systemes (www.cosmicblobs.com): Kid-friendly 3-D–modeling program requires OS X 10.3 for sculpting, decorating, and animating 3-D models ($45).

Flash Optimizer for Mac 1.0, from Eltima Software (www.eltima.com): Utility reduces Flash file sizes by up to 80 percent of their original size ($99).

Silo 1.4, from Nevercenter (www.nevercenter.com): 3-D–modeling software for OS X 10.3 and later adds a new selection-highlighting system and a new snapping manipulator alongside the existing scale, rotate, translate, and universal manipulators ($109).

Swift 3D 4.5, from Electric Rain (www.erain.com): 3-D–animation program can now be used with video-editing tools such as Adobe After Effects and Apple Final Cut Pro ($229; upgrade from version 4.0, $79).

INTERNET BEAT

Fetch 5.0, from Fetch Softworks (www.fetchsoftworks.com): FTP client adds support for SFTP, Allume Systems' StuffIt, and Apple's Bonjour technology (single-user license, $25; upgrade, $15).

Internet Cleanup 3.0, from Allume Systems (www.allume.com): Privacy utility adds full Tiger support plus a Schedule tool for performing automatic searches and cleaning actions ($30; upgrade, $15).

NetNewsWire 2.0, from Ranchero Software (www.ranchero.com): RSS and Atom news reader for OS X adds tabbed browser and Tiger compatibility ($25).

Opera 8, from Opera Software (www.opera.com): Updated Web browser adds support for Apple's Human Interface Guidelines and Full Keyboard Access functionality (free).

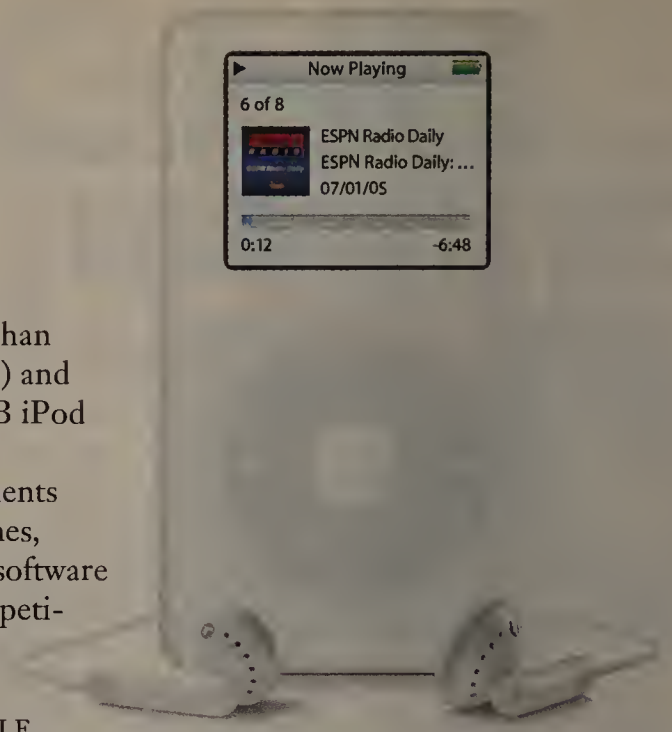
SpamSieve 2.3.1, from Michael Tsai (c-command.com/spamsieve): Spam-filtering application adds OS X 10.4.1 compatibility ($25).

Transmit 3.2, from Panic Software (www.panic.com): Update to FTP software improves reliability of SFTP and iDisk connections and adds Tiger-specific features ($30; upgrade from version 3, free).

BEAT ICONS BY PAUL HOWALT

APPLE MERGES iPOD LINES, LOWERS PRICE OF SHUFFLE

Colorful Display



It was only a matter of time. Just as the TV fully transitioned from black-and-white to color, so, too, must Apple's full-size iPods. The company has merged its iPod and iPod photo lines—and dropped the "iPod photo" name—in an effort to streamline its MP3 player offerings.

"We are simplifying the lineup," says Greg Joswiak, Apple's vice president of iPod product marketing. "We think it's a great next step."

The brand-new iPod lineup features a 20GB model, which holds as many as 5,000 songs, for $299 and a 60GB model, which can hold up to 15,000 songs, for $399. The $100 price difference—and large storage gap—between the 20GB and 60GB models seems to indicate that Apple expects to sell more of the high-end iPods. The company is also offering a new 20GB U2 Special Edition iPod for $329 ($20 less than the previous, gray-scale U2 iPod) and has dropped the price of the 1GB iPod shuffle by $20, to $129.

And with continued improvements (such as Podcast support) to iTunes, Joswiak says, "the hardware and software integration is a strength our competitors can't match"—marketing-speak for sure, but in this case, right on the nose.—JIM DALRYMPLE

MODEL	PRICE	CAPACITY	DISPLAY	BATTERY LIFE	MORE INFORMATION
iPod	$299	20GB	2-inch color	15 hours	macworld.com/0682
iPod	$399	60GB	2-inch color	15 hours	macworld.com/0683
iPod mini	$199	4GB	1.67-inch gray-scale	18 hours	macworld.com/0154
iPod mini	$249	6GB	1.67-inch gray-scale	18 hours	macworld.com/0365
iPod shuffle	$99	512MB	none	12 hours	macworld.com/0368
iPod shuffle	$129	1GB	none	12 hours	macworld.com/0369
iPod U2 Special Edition	$329	20GB	2-inch color	15 hours	macworld.com/0684

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PRODUCTIVITY BEAT

Billings 1.0, from Marketcircle (www.marketcircle.com): Invoice application for contractors and consultants lets you track your time down to the last second by allowing you to start and display Timers from any application, using global hot keys ($39).

ConceptDraw Reporter, from Computer Systems Odessa (www.conceptdraw.com): Addition to ConceptDraw product line is designed for creating image-based educational materials and photo-rich business documents; it requires OS X 10.2 or later ($79).

Konfabulator 2, from Pixoria (www.konfabulator.com): Utility that uses JavaScript and XML to create mini-applications gets an expanded engine for allowing widgets to have multiple windows ($20).

Norton AntiVirus 10.0, from Symantec (www.symantec.com): Antivirus utility adds Tiger compatibility, as well as a new contextual menu for scanning files and directories and new SafeZones for customized virus scanning ($70; upgrade, $40 after mail-in rebate).

RealBasic 2005, from Real Software (www.realsoftware.com): Latest version of software-development program features a new interface, expanded Linux support, and Spotlight integration (Professional Edition, $400; upgrade, $200: Standard Edition, $100; upgrade, $50).

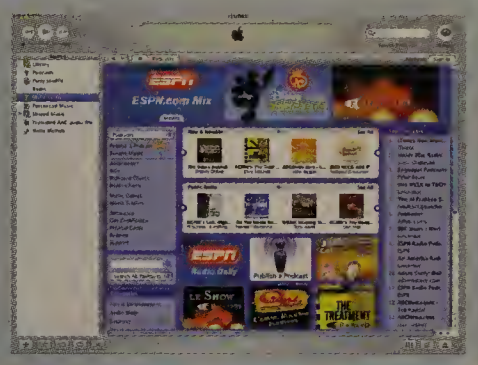
BEAT ICON BY PAUL HOWALT

WHAT'S HAPPENING IN THE DIGITAL MUSIC WORLD?

Listen to the Music

iTunes 4.9 with Podcasting

The latest version of Apple's free digital music jukebox software adds the ability to browse and subscribe to Podcasts—free radio-style shows that you can download and listen to in iTunes or on your iPod. Users can subscribe to more than 3,000 free Podcasts, including those from ABC News, Adam Curry, BBC, Engadget, and NPR member stations such as L.A.'s KCRW.



Apple's iPod Recycling Program

In June, Apple announced that customers can bring in old iPods to any Apple retail store in the United States for free, "environmentally friendly" disposal. What's more, eco-conscious users also earn a 10 percent discount if they purchase a new iPod at the same time.

Supreme Court on Grokster, Morpheus

The Supreme Court ruled that the companies that make file-sharing software Grokster and Morpheus can be held liable for copyright infringements committed by users of their peer-to-peer (P2P) applications. The decision opens the door for movie and music companies to sue P2P companies.

LATIN MUSIC SITE MUSICA360 TO OFFER DRM-FREE DOWNLOADS

Set to Salsa

While Apple has a small market share in the computer industry, it utterly dominates the digital music space, with more than 70 percent of all online music sales. So how can new services hope to compete? By exploiting niches and offering consumers more freedom.

Musica360 (www.musica360.com) is a new online music-download service—set to launch in September—that focuses on Latin music. Like AudioLunchbox (for indie pop and rock), eMusic (for independent bands and live music), and IndieHeaven (for independent Christian music), Musica360 sees a way to compete by offering a specialized service that targets areas the major players don't dominate.

"I think for the little guy to be able to compete, you have to have a niche focus. There's no way for us to compete with the iTunes Music Store on a broad scope," says Musica360 cofounder Christopher English. "So let's take one thing and do it really well. And what we do is Latin music."

Let's take one thing and do it well—and that's Latin music.

Unlike the iTunes Music Store, however, Musica360 will sell MP3 files that are free of any digital rights management (DRM), protection that is intended to prevent purchasers from sharing music.

English argues that the lack of DRM doesn't leave artists any more exposed than they already are with compact discs. "A person can take the CD and do what they want with it anyway," he says. "It's no different than an MP3."

Download prices are similar to Apple's: $0.99 per song, $9.99 per album, or $5 per month for a Mi Musica subscription using the Weed file format (users can play a song three times before being prompted to buy the track for an additional $0.79). Weed is currently a Windows-only format, but beta Mac support should be available before the service launches. (Weed files will not play on an iPod.)

Although the site will offer both major-label and independent music, the focus is going to be on smaller acts.

"There's a whole independent community out there that can't get their music heard," says English. "The indie music might be just as good, but they don't have the money to get the record heard."

Musica360 will launch with U.S. acts only, but its founders hope to expand to other areas, such as Cuba, Puerto Rico, and the Dominican Republic. "There's a lot of talent in the Dominican Republic right now," says Jenny Garcia, a cofounder (with her sister Josephine and English), "and they need help getting their music out over here."

If Musica360 can make it—and if existing similar services stay alive—look for other niche players to emerge. And that will mean more choices for consumers.—MATHEW HONAN

HARDWARE BEAT

CanoScan LiDE 25, from Canon (www.usa.canon.com): Flatbed scanner features 1,200-by-2,400-dpi resolution and 48-bit color depth ($50).

CanoScan LiDE 60, from Canon (www.usa.canon.com): Flatbed scanner with USB 2.0 connectivity offers 1,200-by-2,400-dpi resolution and 48-bit color depth ($80).

EasyShare Photo Packages, from Kodak (www.kodak.com): All-in-one packages combine EasyShare C-Series cameras (C360, C330, or C310 models), the EasyShare Printer Dock Series three-snapshot picture printer, and EasyShare software for the Mac ($239 to $379, depending on features).

Epson Stylus Photo R2400, from Epson (www.epson.com): Photo printer supports media sizes from 4 by 6 inches to 13 by 9 inches, and resolutions of up to 5,760 by 1,440 dpi ($850).

Epson Stylus Pro 4800, from Epson (www.epson.com): Large-format printer supports media as wide as 17 inches and can output a 16-by-20-inch print at 1,440 by 720 dpi in 6 minutes and 41 seconds ($1,995).

TDP-T40U, from Toshiba (www.toshibadirect.com): Mobile projector features 1,800 ANSI lumens brightness, a 2,000:1 contrast ratio, and 1,024-by-768 XGA resolution ($1,399).

MULTIMEDIA BEAT

EyeConnect, from Elgato Systems (www.elgato.com): Software lets Macs stream digital music, video, and photo content to devices that support Universal Plug-and-Play Audio/Video ($99).

Live Capture Plus 1.0, from Square Box Systems (www.squarebox.co.uk): Video-capture software for OS X 10.3 and later captures an entire DV tape unattended, splitting files automatically on scene boundaries ($49).

naviPlay Bluetooth Stereo Kit for iPod, from Ten Technology (www.tentechnology.com): Update to stereo remote and iPod adapter allows you to connect wirelessly to Bluetooth-enabled mobile phones ($239).

PodFreq mini, from Sonnet Technologies (www.podfreq.com): FM transmitter designed specifically for an iPod mini plays music from the device over any nearby stereo ($100).

QuickTime Broadcaster 1.5, from Apple (www.apple.com): Updated Webcasting program is based on QuickTime 7 and adds H.264 broadcasting and improved 3G video streaming (free).

TuneStage for iPod, from Belkin (www.belkin.com): Bluetooth device connects an iPod to a stereo or home entertainment system ($180).

BEAT ICONS BY PAUL HOWALT

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The complete Macintosh problem solving utility.

Diagnostics and Repair

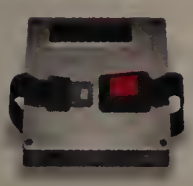
TechTool® Pro includes options to thoroughly check various hardware components, drives, and other aspects of your computer system. One of the most important tests is the S.M.A.R.T. test, which checks for impending drive failure.

Optimization

This feature defragments the files on your hard drive and consolidates all the free space into one large block. Optimizing enhances the overall performance of your hard drives and simiplifies file layout on the disk.

Data Recovery

TechTool Pro includes routines that can search a damaged drive and attempt to recover valid files to another location. Hence, even if a drive is damaged beyond repair, you may still be able to save important data that had not been backed up.

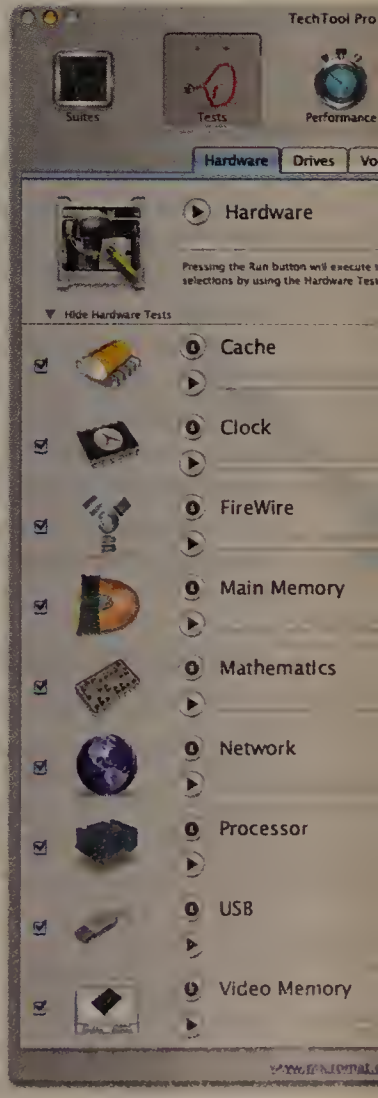


Safety

The Safety feature can be configured to protect your drives by automatically creating backups of critical drive directory data. It can also test the computer for developing problems and alert you, both onscreen and via email, if problems are detected.

eDrive

One of the most innovative features of TechTool Pro is the eDrive. This is a bootable Mac OS X partition containing TechTool Pro and a small copy of your system that you can use in an emergency. It is created on one of your hard drives without the need to reformat.



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OUTSTANDING:
VERY GOOD:
GOOD:
FLAWED:
UNACCEPTABLE:

Power Mac G5s

Double-Layer SuperDrives Are the Highlight of the Line's Modest Advances

BY HENRY NORR

Until Intel-powered Macs begin to arrive next year, odds are that Mac users can expect only modest processor-speed increases. Apple will try to make its new computers enticing to consumers by beefing up other system components.

At least that's the pattern suggested by the latest update to the Power Mac G5 line. The new pro desktops have only slightly faster CPUs than their predecessors, but they feature a variety of other improvements: larger hard drives, heartier video cards, and a new and improved double-layer SuperDrive.

Speed Is the Key

The top-of-the-line model, which still costs $2,999, now has two liquid-cooled G5 processors running at 2.7GHz, up from 2.5GHz in the previous Power Mac generation (♦♦♦♦½; December 2004; macworld.com/0208). The midrange configuration, priced at $2,499, now has a pair of 2.3GHz CPUs, up from 2GHz, while the $1,999, base dual-processor system has gone from 1.8GHz to 2GHz per processor. Along with the faster CPUs, the frontside bus—the channel that connects the processors to the system memory controller—has also gotten a speedup, because in these machines it's designed to run at half the speed of the CPUs.

(In late June, Apple discontinued its last single-processor Power Mac, the $1,499 model with one 1.8GHz G5 [♦♦♦; February 2005; macworld.com/0177].)

The higher clock speeds in the latest models translate to correspondingly better performance in the real-life tests that make up Macworld Lab's new Speedmark 4 benchmark suite (see the benchmark chart, page 27). Overall, the new machines are 11 to 15 percent faster than their predecessors. For people who run the most-demanding Mac applications, this seemingly modest increase can make a big difference. For example, Apple points out that the new dual-2.7GHz Mac, combined with the latest version of Final Cut Pro, is the first personal computer ever to permit simultaneous, real-time editing of two streams of uncompressed video.

But watch out for a change in the low-end system: while the old dual-2GHz Power Mac could accommodate as much as 8GB of RAM, the new one can hold only half as much; likewise, the new model's three expansion slots are based on the PCI standard, not on the faster PCI-X technology found in the dual-2.3GHz and -2.7GHz systems (as well as last year's dual-2GHz and -2.5GHz models).

Tons More Storage

All three updated models feature appreciably larger 7,200-rpm Serial ATA hard drives. In the $1,999 configuration, hard-drive capacity has doubled, from 80GB to 160GB; in the two other systems, it has jumped from 160GB to 250GB. Standard memory in the $1,999 system has also doubled, to 512MB, catching up with the pricier models.

PHOTOGRAPHS BY PETER BELANGER

POWER MAC G5S COMPARED

COMPANY	PRODUCT	RATING	PRICE	CONTACT	PROS	CONS
Apple Computer	Power Mac G5/dual-2GHz	♦♦♦♦	$1,999	www.apple.com	Lots of bang for the buck; comes with more RAM and larger hard drive; double-layer SuperDrive.	Half the memory capacity of the more-expensive models; smaller hard drive; no PCI-X slots.
Apple Computer	Power Mac G5/dual-2.3GHz	♦♦♦♦	$2,499	www.apple.com	Good performance; big hard drive; double-layer SuperDrive; huge memory capacity; PCI-X slots.	Extra performance and features compared with entry-level model may not justify $500 price premium.
Apple Computer	Power Mac G5/dual-2.7GHz	♦♦♦♦	$2,999	www.apple.com	Fastest Mac available; support for 30-inch Cinema HD display; big hard drive; double-layer SuperDrive; huge memory capacity; PCI-X slots.	Relatively steep premium for modest performance advantage.

REVIEWS YOU CAN TRUST Macworld rates only final shipping products, not prototypes. What we review is what you can actually buy.

All three dual-processor machines come with a new SuperDrive, which offers two advantages over the one in previous dual-processor Power Mac G5s. This SuperDrive can read most DVDs and burn standard DVD-R discs at 16×, twice the previous model's speed. And the new drive is the first from Apple that can burn double-layer recordable discs, which hold a whopping 8.5GB—a big jump from the 4.7GB capacity of single-layer DVD media. In concrete terms, double-layer discs hold as many as 3.5 hours of MPEG-2 video, compared with 2 hours on single-layer discs.

There are a couple of things to beware of, though: First, DVD+R DL discs, the double-layer format the new SuperDrives require, are not cheap. At brick-and-mortar stores, packs of three typically go for about $20. You can find lower prices online, of course, especially if you buy in bulk, but don't expect the kinds of bargains that are common with single-layer DVD media.

Second, don't expect blazing speed. The new Power Mac SuperDrive has a maximum speed of 4× for double-layer burning, and even that—like all speed ratings on optical drives—isn't a very good guide to real-life burn times. When we tried backing up 7.5GB of data from the Finder, it took 51 minutes and 37 seconds to complete the job, including verification.

Double the DVD All of the new Power Mac G5s can burn 8.5GB, double-layer DVD+R DL discs.

Faster Bluetooth, Bigger Screens

Like their predecessors, the new Power Macs offer a wealth of network and peripheral connectors. A USB 2.0 port, a FireWire 400 connector, and a headphone jack are conveniently located on the front panel. On the back are a dozen ports: two for USB 2.0; one each for FireWire 400, FireWire 800, Gigabit Ethernet, and an internal V.92 56-Kbps modem (now a $29 option); four audio jacks (both analog and optical inputs and outputs); and antenna connectors for optional internal AirPort Extreme and Bluetooth cards ($79 and $50, respectively, or $99 for both, if ordered at the time of purchase).

The only change here is that Apple's Bluetooth card for the Power Macs now supports the latest standard, Bluetooth 2.0+Enhanced Data Rate (EDR). Aside from the latest PowerBooks, there aren't many Bluetooth 2.0 devices out there yet, but when they arrive, the new Power Mac card will be able to exchange data with them at three times the rate of older Bluetooth connections. (For more about Bluetooth 2.0+EDR, see "Inside Bluetooth 2.0" at macworld.com/0591.)

Apple has also updated the default video cards in all three dual-processor Power Macs. The $2,999 model, in which an ATI Radeon 9600 XT card with 128MB of video RAM used to be standard, now has a Radeon 9650 card with 256MB of video RAM. In the other two models, the Radeon 9600 with 128MB of RAM is now standard, replacing the Nvidia GeForce FX 5200 Ultra with 64MB of memory.

We didn't detect any particular performance benefits resulting from the new cards—in fact, the dual-2.7GHz Power Mac with the Radeon 9650 card delivered fewer frames per second in our Unreal Tournament test than the old dual-2.5GHz model with the Radeon 9600 XT card. The main benefit of the 9650 is that it provides painless support for larger screens—in particular, Apple's 30-inch Apple Cinema HD display. But if you want to connect two 30-inch Apple monitors, then you'll need to upgrade to a special Nvidia card. The Radeon 9600, the card that's standard in the $1,999 and $2,499 systems, still can't handle the 30-inch display, but buyers of either of those models can upgrade to the Radeon 9650 for a mere $50.

Macworld's Buying Advice

If you already have a relatively recent Power Mac, nothing in this latest lineup is likely to send you running for the nearest Apple Store. But if your current system is getting so long in the tooth that you don't want to wait for the Intel-powered replacements, or if your work requires every last bit of processing power money can buy, all three of the latest Power Macs have strong merits. If you spend your days doing processor-intensive tasks on big files—whether applying image filters, encoding video, or engineering genes—the dual-2.7GHz system may be worth its price. However, if you can live with less-than-maximum performance, the other two models offer more bang for your buck, despite their limitations. □

HENRY NORR is a former editor of *MacWeek* and a former technology columnist for the *San Francisco Chronicle*.

Macworld	Speedmark 4	Cinema 4D XL 9.1	iMovie HD	iTunes 4.7	Adobe Photoshop CS2	Unreal Tournament 2004	Compressor
	OVERALL SCORE	RENDER	RENDER	MP3 ENCODE	SUITE	FRAME RATE	MPEG-2 ENCODE
Power Mac G5/dual-2GHz	205	1:24	0:29	1:08	1:06	38	4:46
Power Mac G5/dual-2.3GHz	226	1:13	0:35	0:58	0:59	40	4:24
Power Mac G5/dual-2.7GHz	250	1:02	0:25	0:52	0:53	49	3:52
Power Mac G5/1.8GHz	*160*	*3:06*	*0:40*	*1:49*	*1:33*	*27*	*10:04*
Power Mac G5/dual-2GHz (previous)	*196*	*1:25*	*0:38*	*1:07*	*1:23*	*39*	*4:59*
Power Mac G5/dual-2.5GHz	*225*	*1:08*	*0:36*	*0:54*	*0:56*	*52*	*4:19*
	>Better	<Better	<Better	<Better	<Better	>Better	<Better

BEST RESULTS IN **BOLD**. REFERENCE SYSTEMS IN *ITALICS*.

Speedmark 4 scores are relative to those of a 1.25GHz Mac mini, which is assigned a score of 100. Adobe Photoshop, Cinema 4D XL, iMovie, and iTunes scores are in minutes:seconds. All systems were running Mac OS X 10.4 and had 512MB of RAM, with processor performance set to Highest in the Energy Saver preference pane. We converted 45 minutes of AAC audio files to MP3 using iTunes' High Quality settings. We used Unreal Tournament 2004's Antalus Botmatch average-frames-per-second score; we tested at a resolution of 1,024 by 768 pixels at the Maximum setting. The Photoshop Suite test is a set of 14 scripted tasks using a 50MB file. Photoshop's memory was set to 70 percent and History was set to Minimum. For more information on Speedmark 4, visit macworld.com/speedmark.—MACWORLD LAB TESTING BY JAMES GALBRAITH AND JERRY JUNG

iMac G5s

Welcome Improvements Across Consumer Line

BY HENRY NORR

Apple used to call product-line updates that featured processor-speed increases "speed bumps." Nowadays, though, it might make more sense to use the term "feature bumps."

The latest iMac G5s are a case in point. Yes, their G5 processors are faster, but not to a degree you're likely to notice without a stopwatch (see the benchmark chart, page 30). The real value of this update lies in a series of welcome improvements to other system components, starting with more memory and the addition of AirPort Extreme and Bluetooth cards (these cards are no longer mere options).

In appearance, the new iMacs are indistinguishable from their immediate predecessors. The choice among configurations hasn't changed dramatically, either. The entry-level version has a 1.8GHz G5 processor (up from 1.6GHz), a 17-inch display, and a Combo drive (CD-RW/DVD-ROM), and still costs $1,299. The midrange model—with the same 17-inch display but a faster, 2GHz processor (up from 1.8GHz) and a DVD-burning SuperDrive—stays at $1,499. Only the high-end configuration—with a 20-inch display, a 2GHz processor, and a SuperDrive—saw a price change: it now costs $1,799, down from $1,899.

More of Almost Everything

Within this framework of continuity, however, you'll find plenty of changes that will improve your experience and maybe even save you money.

Double the Memory All three configurations now come with 512MB of RAM, up from 256MB; in other words, you no longer have to spend extra money just to give OS X the memory it really needs. And Apple was

PHOTOGRAPH BY PETER BELANGER

THE CONQUEST

DiskWarrior is Now OS X Native

It's the indispensable utility that repairs problems such as disks that won't mount, files you can't trash, and folders that have disappeared. MacUser magazine said, "It's the fastest and safest data recovery utility you can buy."

Macworld magazine said, "DiskWarrior is by far the best disk utility available for the Mac; it can repair virtually any disk problem you may encounter...and it is likely to become the only tool you'll want to keep with you at all times."

David Coursey, ZDNet AnchorDesk, agrees in an article comparing disk utilities. He used it to fix a disk that no other utility could. "DiskWarrior is a great product, not just because it fixed a pretty serious screw-up, but because it showed me what it planned to do in minute detail before doing it."

But disk damage isn't the only threat to your data. As hard drives get older, the drive mechanisms

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kind enough to put all 512MB on one DIMM, so if you want to add even more, there's still a free slot.

Bigger Hard Drives The hard drives in the entry-level and midrange configurations have also doubled in capacity, from 80GB to 160GB, while the high-end model now has 250GB of storage, up from 160GB. As in the older models, these models' Serial ATA drives spin at 7,200 rpm.

Wireless Built In AirPort Extreme and Bluetooth are now standard in all three configurations; previously, they were $79 and $50 options, respectively. The Bluetooth module implements the latest standard, Bluetooth 2.0+Enhanced Data Rate (EDR), which few, if any, other manufacturers have adopted. But once the new Bluetooth begins to appear in phones and other gizmos, it should mean faster data transfers, longer battery life for portable devices, and smoother operation when multiple devices are connected simultaneously (for more about Bluetooth 2.0+EDR, see "Inside Bluetooth 2.0" at macworld.com/0591).

Double-Layer SuperDrives Like the new Power Mac G5 models, new iMacs with SuperDrives can burn as much as 8.5GB of video or other data onto a double-layer DVD+R disc, compared with a maximum of 4.7GB onto conventional (single-layer) recordable DVDs. To put it another way, one double-layer disc can hold about 3.5 hours' worth of MPEG-2 video, while a single-layer disc can hold 2 hours.

Improved Graphics Cards In all the iMac configurations, the ATI Radeon 9600 graphics processor with 128MB of video memory—the same card that's now standard in the $1,999 and $2,499 Power Macs—has replaced the card used in last year's iMacs, the Nvidia GeForce FX 5200 Ultra. We didn't notice a difference in routine use, but gamers will certainly appreciate the upgrade: in our Unreal Tournament 2004 test, the new iMacs handled significantly more frames per second than the old models (see the benchmark chart, page 30).

Faster Networking All three iMacs now support Gigabit Ethernet, as well as the 10- and 100-megabit-per-second wired protocols supported by the older models. Most routers and switches for home users—including Apple's AirPort Express and AirPort Extreme Base Station—still don't support gigabit operations, but if you've got one that does, you'll be able to move

continues on page 32

iMAC G5S COMPARED

COMPANY	PRODUCT	RATING	PRICE	CONTACT	PROS	CONS
Apple Computer	17-inch iMac G5/1.8GHz	★★★★	$1,299	www.apple.com	Striking design; adequate memory; AirPort Extreme and Bluetooth 2.0+EDR now standard.	No height adjustment; no front ports; no DVD burner.
Apple Computer	17-inch iMac G5/2GHz	★★★★	$1,499	www.apple.com	Striking design; adequate memory; AirPort Extreme and Bluetooth 2.0+EDR now standard; double-layer SuperDrive.	No height adjustment; no front ports.
Apple Computer	20-inch iMac G5/2GHz	★★★★½	$1,799	www.apple.com	Striking design; reduced price; huge, wide-format screen; big hard drive; adequate memory; AirPort Extreme and Bluetooth 2.0+EDR now standard; double-layer SuperDrive.	No height adjustment; no front ports.

See the iMacs' Macworld Lab test scores, page 30.

CONTINUES

begin to malfunction. Eventually, the malfunctions become so severe that the drive simply stops working. DiskWarrior can automatically test for hardware malfunctions, giving you the chance to back up your data before it's too late.

Be prepared. Don't wait until after you have a disk disaster to buy your copy of DiskWarrior. Bob LeVitus, aka Dr. Mac, said, "I feel naked without DiskWarrior." You can believe MacHome magazine when they said, "DiskWarrior is a quick, one-click solution to faster, more stable hard drives."

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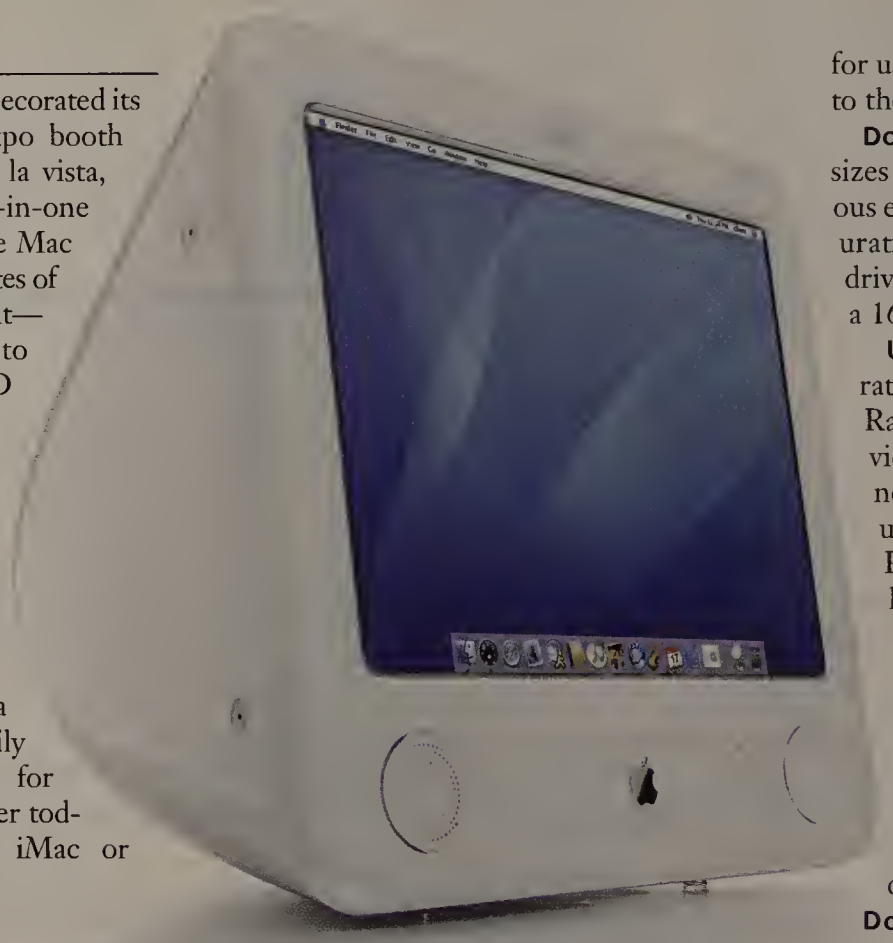
1.42GHz eMac G4s

Bigger Drives, Better Graphics for Last CRT Mac

BY HENRY NORR

Almost four years after Apple decorated its Macworld Conference & Expo booth with banners reading "Hasta la vista, CRT," the CRT-based, all-in-one eMac still holds a place in the Mac lineup. In fact, the very attributes of the CRT—its bulk and weight—that caused most customers to abandon CRTs as soon as LCD flat panels became affordable are why the eMac has survived in its niche. Measuring 15.8 inches high, 15.8 inches wide, and 17.1 inches deep, and weighing 50 pounds, the eMac remains the machine of choice for school administrators who worry that a sleeker system might more easily end up "walking away," and for parents concerned that an eager toddler might knock over an iMac or drop an iBook.



Spring Tune-up

The latest update brings no fundamental changes to the design the eMac has retained since its introduction in 2002: it still features a 17-inch display built into an all-white plastic case derived from the groundbreaking design of the first-generation iMac. The price structure that's been in place for more than a year hasn't changed, either: there are still two configurations, a $799 one with a Combo drive and a $999 one with a SuperDrive.

The update, however, brings changes to many of the eMacs' component subsystems.

Faster Processors The chips that drive the machines are still G4s, but they now run at 1.42GHz, up slightly from last year's 1.25GHz clock speed.

More Memory in One Configuration The $999 eMac now comes with 512MB of RAM, twice as much as before. Unfortunately, the $799 model still has only 256MB, an amount that's really not sufficient for providing a good user experience, especially with software such as Tiger (OS X 10.4) and iLife '05 loaded on the machine. In both configurations, one DIMM slot remains free for users who want to add more memory, up to the eMacs' maximum of 1GB.

Doubled Storage Capacity Hard-drive sizes have doubled compared with the previous eMac generation: the entry-level configuration now comes with an 80GB hard drive, while the more expensive version has a 160GB drive.

Updated Graphics While both configurations previously came with an ATI Radeon 9200 graphics chip with 32MB of video memory, both now include the newer Radeon 9600—the same chip now used in the latest iMac G5s and two Power Mac G5 configurations. This chip has 64MB of dedicated memory. The change helped produce an improvement of more than 50 percent in the frame rate we recorded in our Unreal Tournament 2004 test. That, of course, is not the application school administrators are buying hardware for, but the scores are indicative of better support for demanding graphics programs.

Double-Layer DVD Burning Like the SuperDrive in other recent desktop Macs, the one that comes in the $999 eMac is capable of burning as much as 8.5GB of data onto a double-layer recordable DVD.

Altogether, no one would call the eMacs speedsters by today's standards, partly because other desktop Macs have faster buses, which transfer data from the processor to the RAM. Still, the update produces a surprisingly large boost in the eMacs' scores on our Speedmark 4 benchmark test, and these scores are actually not all that far behind the iMac G5's scores.

continues on page 32

	Speedmark 4	Adobe Photoshop CS2	Cinema 4D XL 9.1	Compressor	iMovie HD	iTunes 4.7	Unreal Tournament 2004
	OVERALL SCORE	SUITE	RENDER	MPEG-2 ENCODE	RENDER	MP3 ENCODE	FRAME RATE
Apple iMac G5s							
17-inch iMac G5/1.8GHz	163	1:34	3:05	10:17	0:38	1:50	29
17-inch iMac G5/2GHz	174	1:28	2:46	9:22	0:32	1:33	31
20-inch iMac G5/2GHz	174	1:29	2:46	9:40	0:37	1:33	32
20-inch iMac G5/1.8GHz	*155*	*1:35*	*3:07*	*10:12*	*0:38*	*1:49*	*23*
Power Mac G5/1.8GHz	*160*	*1:33*	*3:06*	*10:04*	*0:40*	*1:49*	*27*
Apple eMac G4s							
eMac G4/1.42GHz (Combo drive, 80GB HD)	140	1:46	4:54	12:15	0:46	2:31	21
eMac G4/1.42GHz (SuperDrive, 160GB HD)	142	1:46	4:53	12:06	0:44	2:30	20
eMac G4/1.25GHz	*117*	*2:02*	*5:38*	*12:56*	*0:55*	*2:56*	*13*
	>Better	<Better	<Better	<Better	<Better	<Better	>Better

BEST RESULTS IN **BOLD**. REFERENCE SYSTEMS IN *ITALICS*.

Speedmark 4 scores are relative to those of a 1.25GHz Mac mini, which is assigned a score of 100. Adobe Photoshop, Cinema 4D XL, iMovie, and iTunes scores are in minutes:seconds. All systems were running Mac OS X 10.4 and had 512MB of RAM, with processor performance set to Highest in the Energy Saver preference pane. We converted 45 minutes of AAC audio files to MP3 using iTunes' High Quality settings. We used Unreal Tournament 2004's Antalus Botmatch average-frames-per-second score; we tested at a resolution of 1,024 by 768 pixels at the Maximum setting. The Photoshop Suite test is a set of 14 scripted tasks using a 50MB file. Photoshop's memory was set to 70 percent and History was set to Minimum. For more information on Speedmark 4, visit macworld.com/speedmark.—MACWORLD LAB TESTING BY JAMES GALBRAITH AND JERRY JUNG

PHOTOGRAPH BY PETER BELANGER

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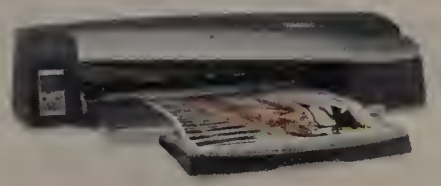

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[1]Wilhelm Imaging Research, Inc concluded that prints made on HP Designjet 90 and HP Designjet 130 series printers with HP No 85 ink cartridges and HP Premium Plus papers may be displayed indoors under glass for 82 years before noticeable fading and [illegible] (visit www.wilhelm-research.com for full details). [2]Using the HP Tri-Color, the HP Gray Photo, and the HP Blue Photo Inkjet Print Cartridges on HP Premium Plus photo papers, results in photos that resist fading for over 100 years displayed under glass or over 200 years in a photo album Based on Wilhelm-Research.com light-fade testing under glass for similar systems (as of November 2004); for more information on additional permanence testing factors, visit http://hp.com/go/premiumplusphoto For full list of program terms and conditions, visit www.hp.com/go/extreme1 Some images are simulated © 2005 Hewlett-Packard Development Company L.P The information contained herein is subject to change without notice

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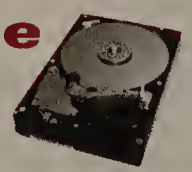
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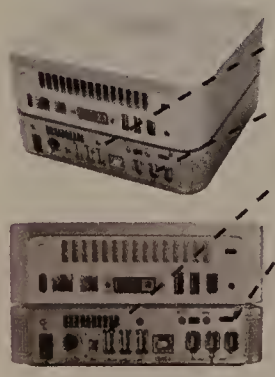
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iMac G5s

continued from page 29

files around your local network much faster than before.

Not Perfect Yet

Unfortunately, Apple hasn't fixed the few design drawbacks we found when we first looked at the iMac G5 last year (December 2004; macworld.com/0509). It's still not as easy to adjust the display as it was to adjust the dome-base iMac G4's—in particular, there's no way to adjust the display's height (you'll need to set the iMac on a stand if you want the screen higher). And even though Apple has given the Power Mac line convenient front-panel connectors for headphones and USB and FireWire peripherals, it still hasn't brought this innovation to the iMac. Digital camera users would also appreciate a built-in reader for flash-memory cards—a feature now common among Windows PCs designed for the consumer market.

It may be worth noting that, according to anecdotal evidence, the iMac G5 in its original incarnation appears to have suffered more than its expected share of hardware problems—online forums, including Apple's discussion area, include quite a few reports of failures; many of them describe bulging or even leaking capacitors on the logic boards. (Apple says it isn't seeing "anything out of the ordinary.") If these reports are true, let's hope the new models turn out to be more reliable than past models.

Macworld's Buying Advice

No single change in the latest iMac G5s is earthshaking, but together they add significant value to a series that was already quite appealing. Choosing the configuration that's right for you is relatively simple, because the only major differences in the lineup now are screen size and optical drive. If you're on a tight budget, and if you have no interest in burning DVDs (for distribution of video or for backing up data), the $1,299 model remains a real bargain. But for people who can afford a little more, the high-end configuration, with its vast screen, roomy hard drive, double-layer SuperDrive, and reduced price, is again the pick of the litter. □

1.42GHz eMac G4s

continued from page 30

Price Concerns

Although Apple has made AirPort Extreme and, in many cases, Bluetooth standard in other Mac models without increasing prices, these wireless features still cost extra in the eMacs. An AirPort Extreme card is $79, Bluetooth is $50, and you can get both for $99. You can add the AirPort card at any time; Bluetooth and the $99 package deal are available only as build-to-order options.

Apple's pricing choice may make sense, because many of the eMac's target customers may not need wireless networking. (A 56-Kbps V.92 modem and 10/100 Ethernet are built in.)

But the lack of wireless support and Apple's decision to keep the entry-level eMac's memory at just 256MB may make you wonder whether the eMac's price has kept up with the times. After all, the 1.42GHz Mac mini, which has specs similar to those of the low-end eMac, costs only $599, and good-quality, stand-alone 17-inch CRT monitors *retail* for less than $150. In that light, it's not easy to see why the entry-level eMac still costs $799.

Of course, education buyers are often able to negotiate discounts. A lower list price, however, would make the eMac more affordable for low-income individuals, families, and students who prefer a sturdy all-in-one system to the Mac mini's modular design.

Macworld's Buying Advice

If you're choosing between the two eMac configurations, the only real consideration is whether you want a DVD burner. People who don't need to burn DVDs can start with the $799 model, upgrade the system to match or beat the $999 version's additional hard-drive capacity and memory, and still save at least $100. □

HENRY NORR is a former editor of *MacWeek* and a former technology columnist for the *San Francisco Chronicle*.

eMACS COMPARED

COMPANY	PRODUCT	RATING	PRICE	CONTACT	PROS	CONS
Apple Computer	eMac G4/ 1.42GHz with Combo drive	♦♦♦½	$799	www.apple.com	Sturdy and attractive all-in-one design; decent performance; larger hard drive; improved graphics.	Bulky; inadequate memory; no wireless support; expensive compared with the Mac mini.
Apple Computer	eMac G4/ 1.42GHz with SuperDrive	♦♦♦♦	$999	www.apple.com	Sturdy and attractive all-in-one design; decent performance; larger hard drive; improved graphics; double-layer SuperDrive.	Bulky; no wireless support.

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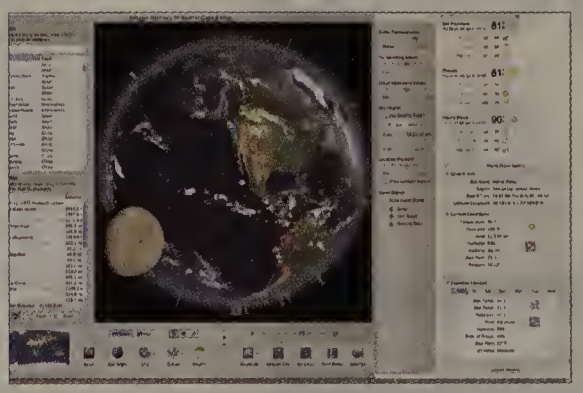
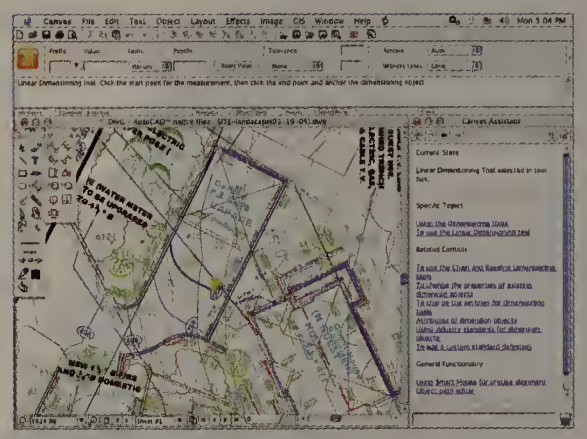
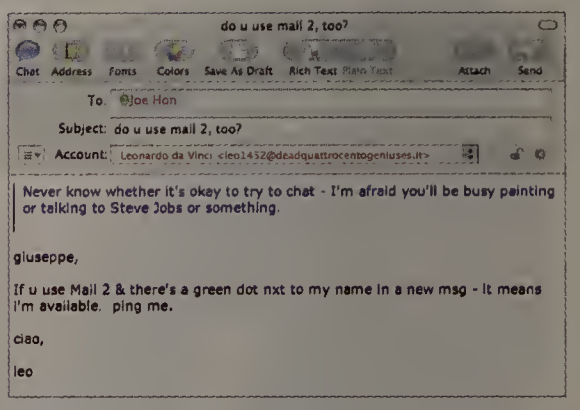


●●●●● **3D Weather Globe & Atlas 1.1** ▲ ($40), from Software MacKiev (www.mackiev.com): If you're interested in weather or geography, you absolutely must have 3D Weather Globe & Atlas 1.1. Its real-time weather feed is unmatched in scope and reasonably priced. And the program is just plain fun. It even comes with a screen-saver module that shows an amazing satellite flyover of the earth's surface (macworld.com/0647).



●●●●½ **Canvas X** ▲ ($350), from ACD Systems (www.acdamerica.com): There are enough new features in this version that existing Canvas users can easily justify upgrading. New users who can take advantage of Canvas X's versatility will save hundreds of dollars instead of having to buy a suite of products that cover all of Canvas's illustration, page-layout, image-editing, and Web-design capabilities (macworld.com/0648).

●●●●½ **Curio 2.4** ($129), from Zengobi (www.zengobi.com): This difficult-to-classify creativity software is ideal for out-of-the-box thinkers. Its polished, easy-to-use interface, flexibility, and research tool help encourage creative thought, though its drawing tools are very basic. If you find notebooks, outliners, and information managers too confining, Curio will give your imagination the space to run free (macworld.com/0656).



●●●½ **Mail 2.0** ▲ (free), from Apple Computer (www.apple.com): If you have Tiger, you've already got Mail 2. Give it a try. If you're using one of Mail's commercial competitors, you may not be persuaded to switch, but you may at least be tempted (macworld.com/0652).

●●●● **Final Cut Express HD** ($299), from Apple Computer (www.apple.com): Final Cut Express HD is a solid, reasonably priced entrant to the world of semiprofessional video editors. If you're not rushing out to buy an HDV (high-definition video) camcorder, the most-compelling new features are Digital Cinema Desktop and the addition of LiveType 1.2.1 and Soundtrack 1.2.1 (macworld.com/0649).

●●●● **MacJournal 3.1** ($30), from Mariner Software (www.marinersoftware.com): MacJournal 3.1 allows you to maintain multiple journals (including text and multimedia) inside a straightforward interface. The new features in this version, such as nested journals, automatic list creation, and full-screen mode, are welcome addi-

MOVING FILES THROUGH CYBERSPACE

File-Transfer Programs

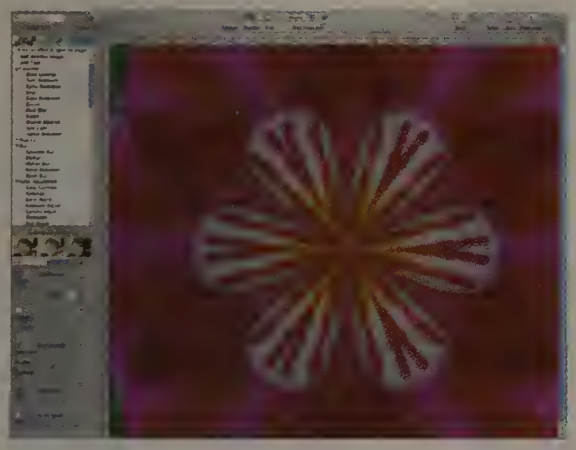
All three of these applications can get your files from point A to point B successfully, but they differ greatly in convenience and ease of use. Despite having some unique capabilities, Captain FTP 4.2 is the most cumbersome of the three; Transmit 3.2 and Fetch 5.0.1 offer smoother, more natural operation. Fetch is no slouch, but Transmit gets the nod for a greater breadth of features and a beautiful design that makes it a pleasure to use (macworld.com/0657).

●●●●½ **Transmit 3.2** ▶ ($30), from Panic (www.panic.com)

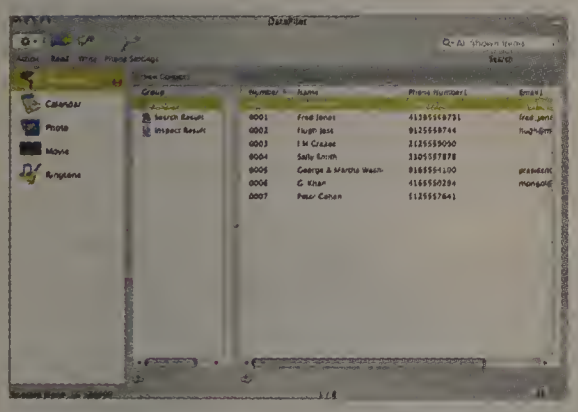
●●●● **Fetch 5.0.1** ($25), from Fetch Softworks (www.fetchsoftworks.com)

●●●½ **Captain FTP 4.2** ($25), from Xnet (captainftp.xdsnet.de/)

tions—and worth the price for devoted MacJournal users—but some may find the free version enough to meet their needs (macworld.com/0655).



iMaginator 1.1 ▲ ($49), from Stone Design (www.stone.com): iMaginator doesn't just put a pretty face on Tiger's Core Image underpinnings, it also lets you accomplish serious digital-imaging special effects with Tiger's exciting new technology (macworld.com/0650).



DataPilot 2.0 ▲ ($100), from Susteen (www.susteen.com): Apple's iSync software makes transferring contact data between your Mac and supported cell phones a cinch. DataPilot 2.0 will give you more features than iSync can provide, such as the ability to upload images and ring tones from your Mac to your phone. The simple ability to import contact and calendar information from your Mac to your phone is worth the cost of this product (macworld.com/0654).

iSweet FireWire Web Camera ($129), from Harmonic Inversion Technology (www.harmonicinversion.com): The iSweet's portability is a plus, but for just $20 more, Apple's iSight is a better, more reliable Web cam (macworld.com/0651).

PictureMate Deluxe Viewer Edition ▼ ($249), from Epson (www.epson.com): You can't ask for a better, more convenient portable ink-jet printer than the PictureMate Deluxe Viewer Edition. Its speed and image quality are great. But the new 2.4-inch LCD, which offers thumbnail previews, and the optional rechargeable battery are what make this product shine (macworld.com/0653).

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Game Room

BY PETER COHEN

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Avast, Ye Scurvy Dogs! The MPAA and the RIAA aren't concerned with this brand of piracy. But you'll have plenty to keep you busy in Tropico 2: Pirate Cove.

STRATEGY

Tropico 2: Pirate Cove

In MacSoft's Tropico 2: Pirate Cove, you're the Pirate King—the de facto ruler of a burgeoning pirate empire—and it's your job to oversee every detail of how your island is run. But who knew that managing a bunch of renegades could be so much work?

At its most basic level, being the Pirate King means managing resources such as timber, food, and iron—largely with the help of captives your crews have grabbed during their raids. As you acquire resources, you can build your empire, creating new docks, shipyards, and structures that will add to your coffers and improve the quality of life on your island. Play well, and eventually you'll be able to harvest sugarcane, which you can use to make rum (and rum makes for happier pirates); turn iron ore into pig iron, which you can then use to make muskets and cannon; and gather tropical fruits.

Matching your facilities to your population is crucial. A tavern that serves beer and simple fare will work well for basic pirate crews, but as your population grows, its tastes will become more sophisticated. Forts, gallows, and stockades can help keep your captives in line, but if you keep them too squashed under your thumb, you raise the risk of resentment and mutiny. Good thing you're omniscient. Knowing what people are thinking will help you keep tabs on how your population (captive and free) is doing and, in turn, how well you're doing.

RATING: ♦♦♦♦
PROS: Varied game play keeps things interesting; great music, sound, and graphics.
CONS: Micromanagement can wear you out quickly.
PRICE: $30
COMPANY: MacSoft, www.macsoftgames.com

Micromanagement has its downsides. You have a ton of details to keep up on, and you can get swamped pretty easily.

You'll also need to keep track of what's happening outside your island kingdom. Tropico 2 divides the region into 18 separate territories, each with strategic alliances to a European power (England, France, and Spain, for example). You can choose to massage your strategic alliances or you can be a brutal and violent leader—assassinating anyone who gets in your way.

In addition to offering a long-term campaign mode, Tropico 2 lets you play single scenarios with specific goals, such as plundering a certain amount of treasure in a certain amount of time. And Tropico's Sandbox mode lets you customize your island's topography, game lengths, and goals. You can even customize *yourself.* You can become one of more than a dozen pirates from myth, legend, and fiction (everyone from Anne Bonny to William Kidd), each with unique management styles and strategic strengths and weaknesses.

This version has much-improved graphics, and you can adjust the quality of the graphics to

continues

News Feed

Colin Races to the Mac

This fall, Feral Interactive plans to release Colin McRae 2005, a rally racing game that puts you behind the steering wheel of real-world off-road racing vehicles on high-speed tracks around the globe. The game will feature 300 stages of competition, interactive scenery, and damage modeling.

Stoked Gamer

Bongfish is putting the finishing touches on Stoked Rider, a new snowboarding game that features 3-D cel-shaded graphics. It will arrive for Mac, Linux, and Windows systems before the end of the year, and it promises ultra-realistic wipeouts.

Myst V

Ubisoft will soon release End of Ages, the final chapter in the Myst saga—simultaneously for Windows and OS X. This game looks to be the most immersive yet, combining the point-and-click interface for which Myst is known with a real-time 3-D engine.

ICON BY PAUL HOWALT

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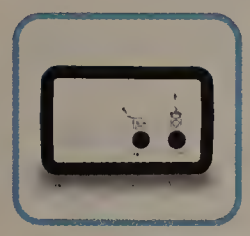

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THE EVOLUTION OF DIGITAL ART
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Bert Monroy embraced the Mac as an artistic medium with the introduction of the Mac 128 in 1984. In this evening talk, open to all, Bert will take you on a journey through the evolutionary transformation of the Mac from its beginnings with MacPaint to its current status as the preferred tool of graphic artist throughout the world.

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SEMINARS

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the capabilities of your graphics card. Tropico 2 requires an 800MHz G4 or faster Mac running OS X 10.2.8 or later.

The Bottom Line Tropico 2: Pirate Cove is the kind of simulation-based strategy game in which you can lose hours, if not days, making sure every element of your empire runs well. If you like digging into the details, it's a lot of fun.

CHILDREN'S GAME

Dora the Explorer: Animal Adventures

RATING: ★★★½
PROS: Multiple levels of difficulty; diverse lessons; cute animals.
CONS: No lesson tracking for parents and teachers.
PRICE: $20
COMPANY: MacSoft, www.macsoftgames.com

In Nick Jr.'s popular kids' show *Dora the Explorer*, Dora is a bighearted, exuberant, bilingual girl who uses both English and Spanish to teach her viewers about the world. She brings the same enthusiasm to learning about wildlife in Dora the Explorer: Animal Adventures, a new edutainment game by MacSoft. It's a good match for preschoolers who are fans of the TV show.

In Dora the Explorer: Animal Adventures, Dora and her simian companion Boots are joined by Dora's cousin Diego. After a bad storm, Diego, who lives at the Animal Rescue Center, recruits Dora and Boots to help him make sure all the animals are safe.

While Dora and Boots explore different habitats, they'll have to find animals and, in many cases, rescue them or reunite baby animals with their parents. As Dora, you stay in touch with Diego using a PDA-like field journal, which you can also use to snap pictures of the animals you encounter, play music videos, or even create your own custom habitats using pictures of the plants and animals.

Dora the Explorer: Animal Adventures is filled with learning activities such as

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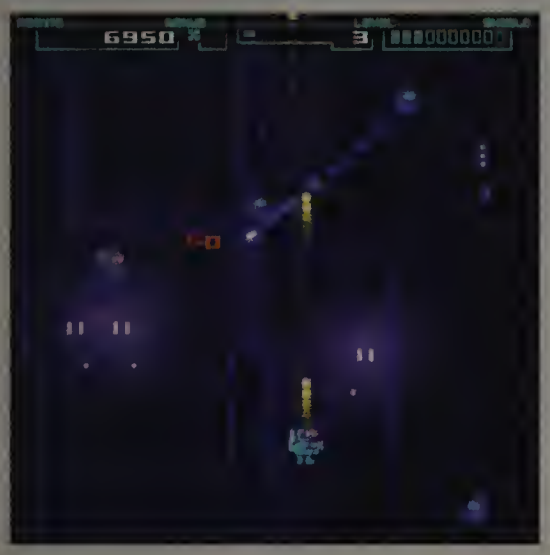
Top Downloads | Ultratron



For those who are too young to remember—or who had better places to be during the mid-1980s—Robotron: 2084 was one of the best arcade games of its time. The game has been mimicked innumerable times over the years. The latest homage is Ultratron, from Puppy Games.

Ultratron pits you against a never-ending swarm of evil killer robots—robots that have already laid waste to the human race. Now vengeance is yours.

To that end, you must battle wave after wave of marching killer robots until you can finally square off against the four bots of the Apocalypse: Leiunitas, Bellum, Lues, and Letum. These boss robots are bigger than their minor counterparts—and much tougher.

All told, Ultratron has more than 40 levels populated by 70 kinds of robots, each with unique capabilities and looks. Despite this variety, the action can become repetitive after a while. Only the truly determined player will make it to the end.

As you play, you can acquire power-ups. Bonus stages let you gain extra points by blasting everything on screen. You can compare your skills to those of other Ultratron players in an online high-score registry.

On the downside, you'll have to rely on your keyboard to play; Ultratron doesn't support game pads or other controllers, which is a real shame since it's screaming for dual-joystick action.

Ultratron costs only $10 to register, and you can try it out for free. The download measures only about 6MB, so it's an easy grab.

The Bottom Line Ultratron pays homage to one of the best games of the arcade era.

RATING: ★★★½
PROS: Boss robots and power-ups enhance game play; online high-score sharing.
CONS: Action becomes repetitive; no game-pad support.
PRICE: $10
COMPANY: Puppy Games, www.puppygames.net

ICON BY PAUL HOWALT

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¡Vamanos! Join Dora and Boots as they rescue animals in this new learning adventure based on the *Dora the Explorer* TV show.

counting, memorizing, matching shapes and colors, and more. The game also includes songs and throws in a little bit of Spanish vocabulary for good measure.

Most of the activities are of the "soft learning" variety. That is, they don't hit you over the head with a hard curriculum, but instead introduce activities that feel more like playtime. For example, Dark Mountain Matchup tests your memory and matching skills by uncovering animals that are hiding in the dark. When you find two that match, you're rewarded and lavished with praise.

The game is for children aged three and up, many of whom haven't developed reading skills, so all the commands and interactions are graphical. Three levels of difficulty will keep kids busy for a while. Given that the title allows kids to enter their names and proceed at their own pace, it would be nice if it included a tracking feature that let parents or teachers know how well their kids were doing in specific areas, as many other edutainment titles do.

If you pick up the game at a store, make sure it has the MacSoft logo and the word *Mac* on the spine of the box, because the Mac version is sold separately from the PC version. You can also order the game from MacSoft's Web site by going to macworld.com/0677.

The game calls for a 400MHz G3 or faster Mac, OS X 10.1.5 or later, and an ATI Rage 128 graphics chip or better. This

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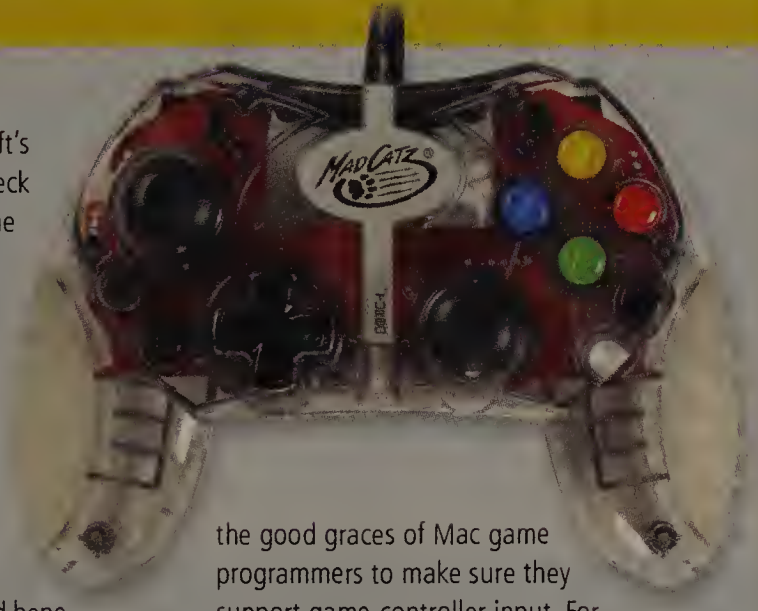
Game Gear

Mad Catz PC Con



If you like the design of Microsoft's Xbox Controller S game pad, check out the PC Con, a new USB game pad from Mad Catz. It features a similar button layout, as well as transparent plastics and gel side grips that give your palms good purchase during long fragging fests.

One particularly nifty feature is the PC Con's Turbo button. Say you're playing a game—a shoot-'em-up, for example—that would benefit from your repeatedly mashing one of the buttons. Just click the Turbo button, located in the lower center of the controller's face. With Turbo enabled, you can press and hold any button for half of a second or longer, and the action for that button will repeat until you disable it. You can even adjust the speed of repetition.

The PC Con isn't wireless, unfortunately, but its 7-foot USB cable offers ample distance.

The ribbed gel grips offer soft, comfortable little pillows for your hands. Unfortunately, the gel material collects dirt and muck at an alarming rate, and proved tough to keep clean.

The one significant downside of the PC Con is that, unlike Nyko's more expensive Air Flo EX, it doesn't come with any programmable Mac software. That leaves you dependent on the good graces of Mac game programmers to make sure they support game-controller input. For games that don't, you'll need a third-party programming utility such as Alessandro Montalcini's USB Overdrive ($20; www.usboverdrive.com).

The Bottom Line Mad Catz's PC Con game pad is a solid value, and it's a welcome option for anyone who craves an Xbox Controller S–style game pad for the Mac.

RATING: ♦♦♦♦

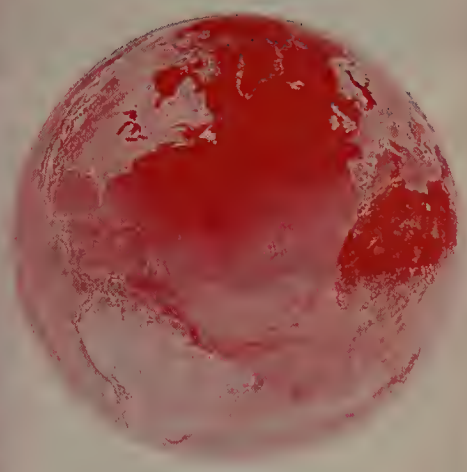
PROS: Comfortable design; Turbo button; long USB cord.

CONS: No Mac driver software; gel grips get dirty quickly.

PRICE: $20

COMPANY: Mad Catz, www.madcatz.com

OmniWeb



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covers older CRT-based iMacs that have been upgraded to OS X.

The Bottom Line Dora the Explorer: Animal Adventures is a fun and benign way to introduce little ones to important learning concepts while they have fun with exotic animals.

PUZZLE

Luxor

RATING: ♦♦♦♦
PROS: Easy to learn; lets you resume where you left off.
CONS: Tired concept.
PRICE: $20
COMPANY: MacPlay, www.macplay.com

MacPlay has a good thing going with Luxor, a new puzzle game that manages to put a fresh spin on a very tired genre.

In Luxor, you're the champion of Isis, the Egyptian goddess of fertility. Your job is to protect Isis's pyramid against the scarab minions of Set (Egyptian god of evil and storms), who push long trains of colored spheres down tortuous grooved tracks toward your front door. To stop them, you'll use your magical winged scarab to drop your own colored spheres into the train. Match up three or more similarly colored spheres, and they'll disappear.

Pyramid Power In Luxor, you must aim well to make sure spheres don't collide with your pyramid.

Admittedly, developers have beaten the object-matching genre into the ground. However, Luxor manages to freshen it up a bit with some interesting strategic twists. For example, you can earn power-ups such as fireballs, which explode on contact with the chains of colored balls and make additional spheres disappear. Multicolored spheres will match with any sphere.

All told, the game offers 88 levels. After the first couple of levels, the pace speeds up and the maze designs get more complicated. You'll find the tracks weaving through tunnels or overlapping, which makes placing your own spheres that much more difficult.

Fortunately, Luxor doesn't presume you have all day to play—you can pause and quit a game at any time and resume later from the point where you left off. The game also gives you the choice of playing in full-screen or windowed mode; this is helpful if you want to play while keeping an eye on some background task. In windowed mode, the game automatically pauses if you click outside the window.

To play, you'll need a 400MHz G3 with 128MB of RAM and a video system with 16MB or more of VRAM; the game runs on OS X 10.2.8 or later.

The Bottom Line Luxor is the kind of game that you can noodle with for hours—between meetings, at lunch, or while hanging out in the living room. □

Macworld.com News Senior Editor PETER COHEN yearns for a pirate's life—or at the very least, a parrot to sit on his shoulder.

Recently Reviewed

The Sims 2

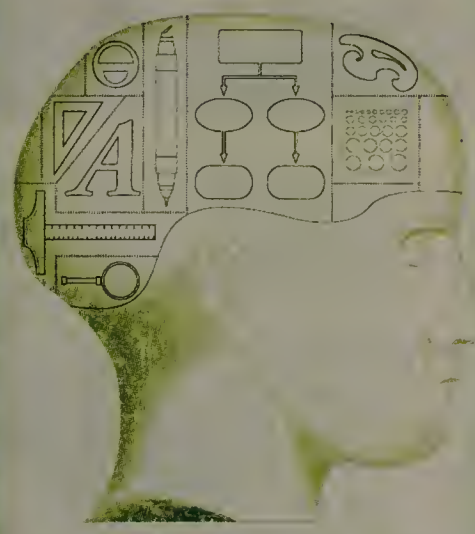
♦♦♦♦; Aspyr Media, www.aspyr.com; $50

This sequel to the very popular Mac game is totally new, but it follows the same ground rules as the original: you must guide simulated people called sims through their daily lives, helping them make decisions that will affect their careers, emotional well being, and relationships.

Version 2 adds the concept of Aspirations—your sims now come with dreams and goals that you must try to fulfill. The game also has a genetics component that lets sims pass their own traits down to their kids. You can even create custom sims that look like you.

All told, The Sims 2 is a technically impressive game that adds many new features to an already proven formula. And believe it or not, The Sims 2 uses some of the most sophisticated and demanding 3-D graphics effects ever seen in a Mac game. A 1.2GHz or faster machine is absolutely mandatory. Owners of ATI graphics cards will want to update their cards with the latest drivers and firmware from ATI—this made a big difference on my X800 card. For more game details and an in-depth first look at The Sims 2, go to macworld.com/0681.

OmniGraffle



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"It's Worth It. With OmniGraffle 4, good things just keep getting better."
Victor Marks, MacNN

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FIREWIRE HARD DRIVES

PORTABLE HARD DRIVE

●●●● 100GB Mercury On-The-Go 5,400-rpm 8MB ($300), from OWC (www.macsales.com):

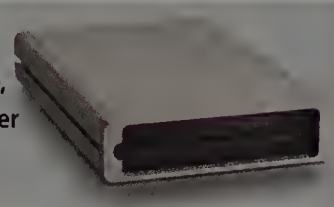
It's a little expensive for its class, but this bus-powered drive has everything: FireWire 400 and 800, USB 2.0, blazing speed, and the ability to start up and run OS X via FireWire (macworld.com/0314).

DESKTOP HARD DRIVE

●●●●½ 400GB Mercury Elite FireWire 800 Pro ($450), from OWC (www.macsales.com):

This fast desktop drive has FireWire 400 and 800 interfaces, and it can start up and run OS X (macworld.com/0580).

DUAL-LAYER DVD BURNER



●●●● d2 DVD± RW 16× FireWire, with Double Layer ($189), from LaCie (www.lacie.com):

This DVD burner can burn 8.5GB of data to dual-layer DVDs (which offer twice the capacity of single-layer discs). Although it has a relatively slow read speed, its performance is very good overall—it burns 2.4×-rated dual-layer media at 4×. Its excellent Mac compatibility includes support for OS X 10.4 (Tiger) and iLife (except for iDVD), and it comes with the full version of Roxio's Toast Titanium (April 2005; macworld.com/0313).

COLOR LASER PRINTERS

●●●● LaserJet 2550Ln ($600), from Hewlett-Packard (www.hp.com):

An inexpensive, networkable color laser printer, the LaserJet 2550Ln offers crisp text and good color fidelity. It supports Apple's Bonjour (formerly Rendezvous) technology. Its paper capacity is only 125 sheets, so you might consider paying the extra $100 for the optional 150-sheet paper tray (macworld.com/0083).

ALSO RECOMMENDED:

NEW ●●●● Magicolor 2430 DL ($499), from Konica Minolta (www.konicaminolta.com):

With an attractive low price, accurate and saturated color prints, and unique features such as PictBridge camera printing, this networked color laser could be a great buy for a home or small workgroup that doesn't require PostScript printing capabilities—and for people who don't have sensitive ears (macworld.com/0635).

MACS

DESKTOP

Product	Processor	Display	Rating	More Information	Best Price[A]	Speedmark Score[B]
iMac	G5/1.8GHz	17 inches	●●●●	macworld.com/0599	$1,249	163
	G5/2GHz	17 inches	●●●●	macworld.com/0600	$1,449	174
	G5/2GHz	20 inches	●●●●½	macworld.com/0601	$1,730	174
eMac	G4/1.42GHz (Combo drive)	17 inches	●●●½	macworld.com/0602	$790	140
	G4/1.42GHz (SuperDrive)	17 inches	●●●●	macworld.com/0603	$993	142
Mac mini	G4/1.25GHz	not included	●●●●	macworld.com/0316	$474	100
	G4/1.42GHz	not included	●●●●	macworld.com/0321	$569	115
Power Mac	G5/dual-2GHz	not included	●●●●	macworld.com/0604	$1,834	205
	G5/dual-2.3GHz	not included	●●●●	macworld.com/0605	$2,310	226
	G5/dual-2.7GHz	not included	●●●●	macworld.com/0606	$2,769	250

PORTABLE

Product	Processor	Display	Rating	More Information	Best Price[A]	Speedmark Score[B]
iBook	G4/1.2GHz	12 inches	●●●●½	macworld.com/0178	$950	90
	G4/1.33GHz (Combo drive)	14 inches	not rated	macworld.com/0179	$1,269	not tested
	G4/1.33GHz (SuperDrive)	14 inches	●●●●	macworld.com/0180	$1,399	100
PowerBook	G4/1.5GHz (Combo drive)	12 inches	●●●●	macworld.com/0398	$1,430	not tested
	G4/1.5GHz (SuperDrive)	12 inches	●●●●	macworld.com/0399	$1,620	not tested
	G4/1.5GHz	15 inches	●●●●	macworld.com/0400	$1,773	123
	G4/1.67GHz	15 inches	●●●●	macworld.com/0401	$2,055	not tested
	G4/1.67GHz	17 inches	●●●●	macworld.com/0402	$2,289	135

[A] From a PriceGrabber survey of retailers as of July 14, 2005. [B] Speedmark 4 is Macworld Lab's standard test tool for benchmarking systems running Mac OS X 10.4 (Tiger). For information on Speedmark testing, go to www.macworld.com/speedmark.

FLATBED SCANNERS

MIDRANGE SCANNER

●●●●½ CanoScan 9950F ($400), from Canon (www.canon.com):

This CanoScan raises the bar for midrange scanners by offering high optical resolution, improved scan quality, and more-intuitive software controls (macworld.com/0188).

LOW-END SCANNER

●●●● CanoScan 8400F ($150), from Canon (www.canon.com):

The 8400F has limited film and transparency support but is a great all-around scanner with some high-end features and a low-end price (macworld.com/0187).

COLOR INK-JET PRINTER

●●●●½ **Photosmart 8450** ($250), from Hewlett-Packard (www.hp.com):

This networkable ink-jet printer uses eight inks to print excellent-looking photos (macworld.com/0280).

DIGITAL CAMERAS

BUDGET CAMERA

●●● **Photosmart M22** ($150), from Hewlett-Packard (www.hp.com); macworld.com/0595

FOR DIGITAL PHOTO BEGINNERS

NEW ●●●● **PowerShot SD400** ($399), from Canon (www.canon.com); macworld.com/0634

FOR INTERMEDIATE SHOOTERS

●●●● **C-7070 Wide Zoom** ($600), from Olympus (www.olympus.com); macworld.com/0577

FOR ADVANCED AMATEURS

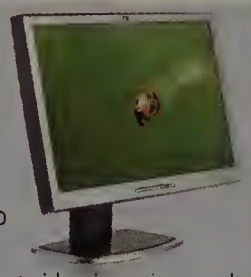
●●●● **Dimage Z5** ($649), from Konica Minolta (www.konicaminolta.com); July 2005; macworld.com/0534

LOW-COST DIGITAL SLR

●●●●½ **EOS Digital Rebel XT** ($899; with EF-S 18mm–55mm f3.5–f5.6 zoom lens, $999), from Canon (www.canon.com); July 2005; macworld.com/0535

LCD MONITORS

23-INCH DISPLAY



●●●●½ **L2335** ($1,599), from Hewlett-Packard (www.hp.com):

Along with its outstanding value and ability to pivot to portrait mode, the HP L2335 also includes excellent video-in options and very good color fidelity and viewing angle (March 2005; macworld.com/0278).

21-INCH DISPLAY

NEW ●●●●½ **MultiSync LCD2070NX** ($799), from NEC Display Solutions (www.necdisplay.com):

The NEC MultiSync LCD2070NX is a great choice for people who want a moderately priced monitor that can display bright, accurate colors (macworld.com/0636).

19-INCH DISPLAY

NEW ●●●● **SDM-HS95P** ($699), from Sony (www.sony.com):

This display lacks some of the extra features found on other displays (such as a USB hub, speakers, or the ability to pivot), but the HS95P is a bright and shiny, nicely designed display that performs well. It comes in silver or black (macworld.com/0638).

17-INCH DISPLAY

NEW ●●●● **SDM-HS75P** ($450), from Sony (www.sony.com):

It's short on bells and whistles—no built-in USB, speakers, or ability to pivot—but the HS75P is a good choice for people with limited desk space who are looking for a bright and shiny, well-designed display. It comes in silver or black (macworld.com/0638).

MINIDV CAMCORDER

●●●● **Optura 60** ($899), from Canon (www.canon.com):

The Optura 60 shoots excellent video (provided you have enough light), with accurate, vibrant color. It also offers optical image stabilization, true 16:9 widescreen mode, and extensive manual controls for creative flexibility. It snaps decent still images, too (macworld.com/0621).

Top Products are those we've recently reviewed in a comparison of like products. As new products become available, we will update the list. For longer reviews of these products and for other product recommendations, go to www.macworld.com/reviews.

IN THE MACWORLD LAB

Hardware Products We Tested This Month

5-MEGAPIXEL CAMERA

●●●½ **Coolpix S1** ($380), from Nikon (www.nikon.com):

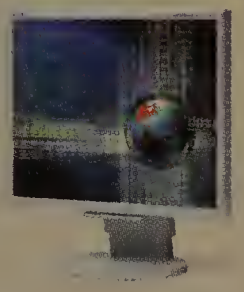
The Coolpix S1 lacks some features enthusiasts might expect, but point-and-shooters who need a bit of guidance will like its easy operation and excellent color (macworld.com/0639).

MINIDV CAMCORDER

●●●½ **ZR400** ($549), from Canon (www.canon.com):

The Canon ZR400 is compact and easy to operate, making it a good choice for recording family fun (macworld.com/0640).

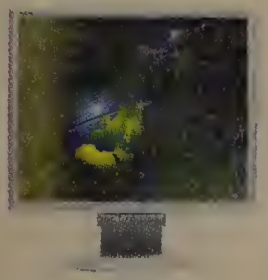
17-INCH DISPLAY



●●●½ **MultiSync LCD1770NX** ($365), from NEC Display Solutions (www.necdisplay.com):

Though correctly calibrating its colors required a bit of tweaking, the LCD1770NX, with its reasonable price and good performance, is a very good general-purpose LCD (macworld.com/0641).

19-INCH DISPLAY



●●●½ **MultiSync LCD1970NX** ($510), from NEC Display Solutions (www.necdisplay.com):

The NEC MultiSync LCD1970NX is a good fit for people who don't mind tinkering with monitor settings a bit (macworld.com/0679).

DIGITAL SLR CAMERA

●●●½ **D70s** (body only, $900; with 18mm–70mm f3.5–4.5G IF-ED lens, $1,200), from Nikon (www.nikonusa.com):

The D70s is a very good camera, but it's not a very good value. If you already own Nikon lenses, then the D70s is an obvious choice. If not, handle it yourself to see how it feels to you (macworld.com/0643).

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MAC GEMS

New and Updated Reviews of Awesome Free and Low-Cost Software

50 MAC GEMS

Every month, the *Mac Gems* column and Weblog bring you reviews of the best free and low-cost applications for OS X. But with new utilities released daily, it's impossible to keep up with them all—so here's a supersized batch of cool software bargains, 50 programs that you may have missed or that are worth another look. And they're all just a few mouse-clicks away.

By Dan Frakes

ILLUSTRATION BY MICHAEL SLACK

BATTERY-STATUS MONITOR

Battorox 1.8

Apple's battery-status menu item tells you how much life your PowerBook's or iBook's battery has left (or how much time is left before it'll be fully charged), but for more-detailed information, check out Battorox (●●●½). It displays your battery's initial and current capacity, cycle count (how many charge cycles your battery has been through), voltage, and temperature. Battorox doesn't work with all PowerBook models (some lack the necessary hardware), but it's a useful tool if you can use it (free; www.branox.com).

RSS-FEED CREATOR

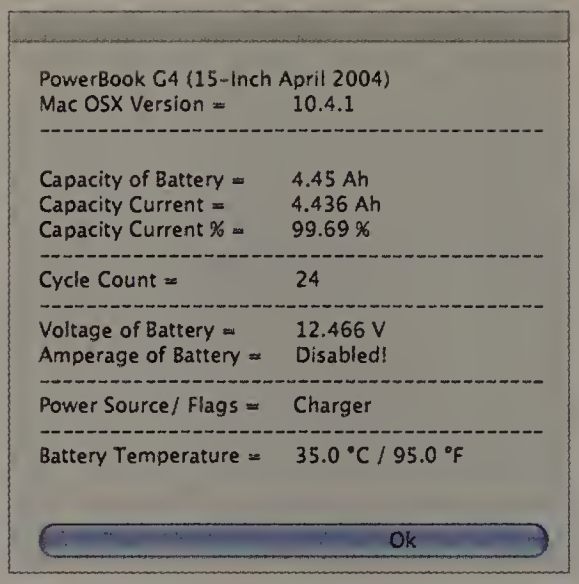
Feeder 1.1.3

If you want to create your own RSS feed but don't know how, Feeder (●●●●) is for you. You provide the articles, and Feeder produces RSS 2.0–compatible feed files that can include formatted text, links, images, and even Podcast enclosures. Customizable templates, live previews, and a simple interface make the process easy—but Feeder also has many advanced features. When you're ready, you can publish your feed to a Web site, an FTP or SFTP server, or a .Mac account ($30; www.reinventedsoftware.com).

FILE EXTRACTOR

File Juicer 3.4

Drop a file or package onto File Juicer (●●●●), and it will search the contents and extract any recognizable JPEG, PNG, GIF, PDF, BMP, WMF, EMF, PICT, TIFF, Flash, Zip, HTML, WAV, MP3, AVI, MOV, MPG, WMV, MP4, AU, AIFF or text files contained inside. This is a great way to extract images or sound files from applications or PowerPoint presentations. File Juicer can even extract images and Flash files from Windows .exe archives and rescue files from corrupt disk images. I sometimes use File Juicer to view the contents of a mysterious .dmg image without mounting it ($8; www.echoone.com).

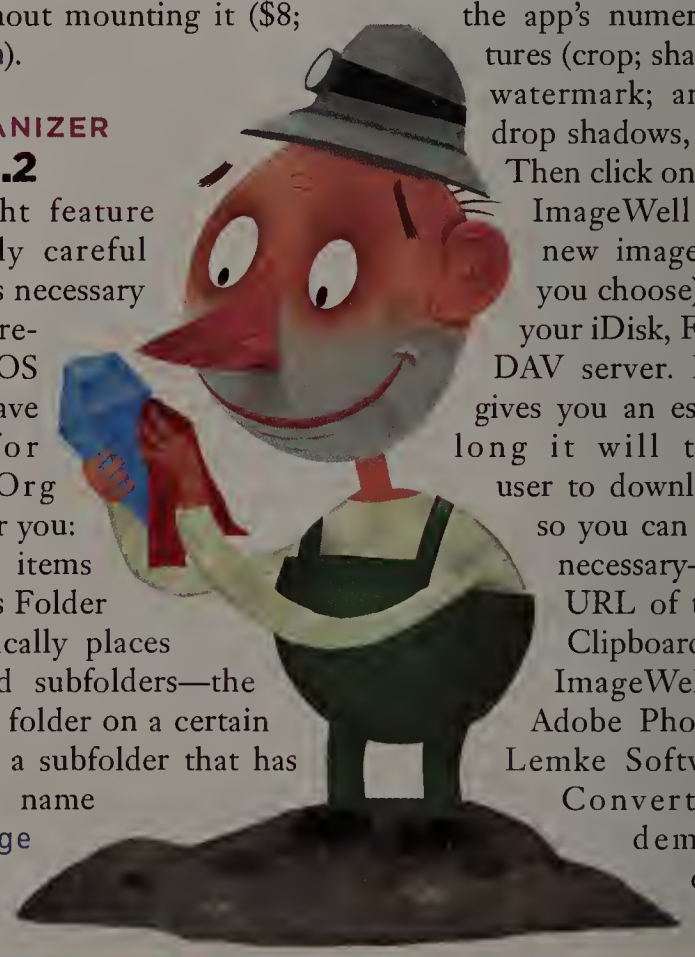


High Voltage Battorox tells you everything you want to know about your laptop battery.

FOLDER ORGANIZER

FolderOrg 1.2

Tiger's Spotlight feature makes extremely careful organization less necessary than it was in previous versions of OS X, but if you have a penchant for order, FolderOrg (●●●●) may be for you: when you drop items into a folder, this Folder Action automatically places them into dated subfolders—the items added to a folder on a certain date are filed in a subfolder that has that date as its name (free; homepage.mac.com/douglaverly).



LOG AND FILE WATCHER

GeekTool 2.1

GeekTool (●●●½) lets you keep an eye on a log file, the output of a command in Terminal, or a changing Internet image, via a configurable display that sits on your desktop or floats above all other windows. The display updates in real time so you can always see, for example, a log's most-recent entries. You can configure multiple displays and create multiple groups of displays that you can switch between using a menu-bar item (free; projects.tynsoe.org).

WEB IMAGE TOOL

ImageWell 2.0.224

If you spend a lot of time preparing photos for the Web, ImageWell (●●●●) can help streamline the process. Drag an image into the "well" to begin using the app's numerous editing features (crop; shape; rotate; resize; watermark; and add borders, drop shadows, labels, and text). Then click on the Send button; ImageWell will create the new image (in the format you choose) and upload it to your iDisk, FTP site, or WebDAV server. ImageWell even gives you an estimation of how long it will take a modem user to download the image—so you can adjust the size if necessary—and copies the URL of the image to the Clipboard after uploading. ImageWell won't replace Adobe Photoshop, or even Lemke Software's GraphicConverter, for more-demanding image editing, but it's a great tool for

{ UPDATED REVIEWS }

Most of the Mac gems I review are updated frequently with new features and bug fixes. So here are new reviews of 10 popular apps.

SCRIPT-MENU UTILITY

FastScripts 2.2.3

OS X's Script menu is a great place to quickly access AppleScripts and shell scripts, but replacing it with FastScripts (●●●●) gives you even more functionality. The biggest advantage is easier creation of keyboard shortcuts—even application-specific ones—for scripts. But FastScripts also offers better performance, quick access to both user and systemwide scripts folders, on-screen script-feedback messages, and better menu organization. It now lets you run Automator workflows without having to launch Automator ($15; www.red-sweater.com).

FILE INFORMATION EDITOR

FileXaminer 2.4.2

Among the myriad utilities that help you edit file information and permissions, FileXaminer (●●●●●) has always stood out, and the latest version is even better. In addition to an easy-to-use interface for editing file permissions and attributes (including advanced attributes such as sticky bits), this utility provides Super Delete and Force Empty Trash functions—accessible from the Dock, Finder contextual menus, or the application itself—for getting rid of stubborn files. It also has a batch mode (for working with multiple

Pretty Picture Speed up your Web-image upload process with ImageWell's simple tools.

the casual image editing and uploading that most people do (free; www.xtralean.com).

DRAWING PROGRAM

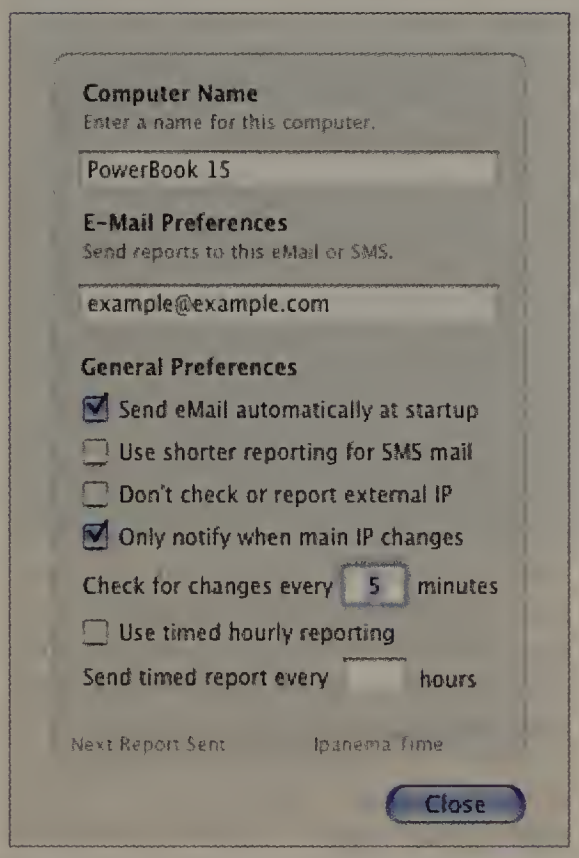
Intaglio 2.3.2

Looking for a powerful drawing application but don't want to spend big bucks for Adobe Illustrator CS2? Then you're going to love Intaglio (★★★★). Although it isn't as rich in features as the $499 Illustrator, Intaglio has all the drawing and graphics tools that most people need. The program also takes advantage of many OS X features, via a Spotlight importer; Automator actions; and support for AppleScript, Apple Type Services, and Quartz graphics tools. The ability to convert PDF, QuickDraw, and ClarisDraw files, and to import from and export to Apple's Pages and Keynote programs, is also sure to please. At $89, Intaglio isn't as inexpensive as most Mac gems, but compared with Illustrator, it's a bargain ($89; www.purgatorydesign.com).

IP-ADDRESS E-MAILER

Ipanema 1.4

To connect remotely to your computer—for accessing files or performing administrative tasks—you need to know its IP address. If you have a dynamic IP address (the case with most DSL, cable, and modem connections), this can be a difficult task. Ipanema (★★★★) provides welcome assistance by e-mailing—via OS X's Mail app—your IP address to you. You can tell Ipanema to alert you when your IP address changes, at periodic intervals, or both. The e-mail message lists both external and internal IP addresses, including the IP addresses for each active network port, such as Ethernet, AirPort, and modem (free; www.ifthensoft.com).



IP Addresser If you need to know your computer's current IP address when you're away from home, Ipanema can e-mail you when anything changes.

TRACKPAD SCROLLING UTILITY

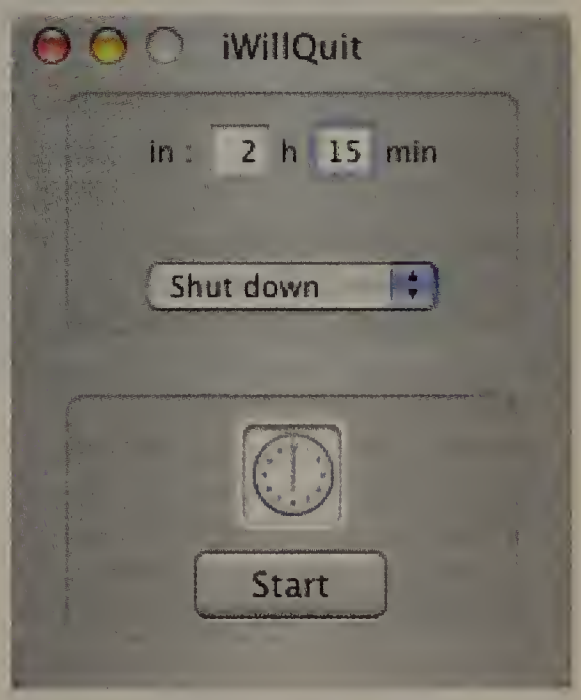
iScroll2 0.25e

Apple's latest PowerBooks let you scroll through windows by dragging two fingers across the trackpad. iScroll2 (★★★★) brings similar functionality to iBooks and many older PowerBooks. With this replacement trackpad driver, you can scroll by dragging two fingers up, down, left, right, or in a circular motion (as with an iPod Click Wheel). You can customize trackpad sensitivity and scrolling speed, and you can assign different mouse-button behaviors to the trackpad button and to finger taps (free; macworld.com/0632).

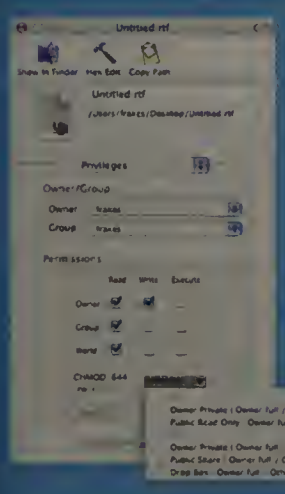
SHUTDOWN TIMER

iWillQuit 1.2

You can set your Mac to shut down or go to sleep at a specific time on certain days, but what if you just want it to shut down after you've finished downloading the lat-



Countdown to Shutdown iWillQuit is a simple timer that tells your Mac when to shut down, restart, go to sleep, or log out.



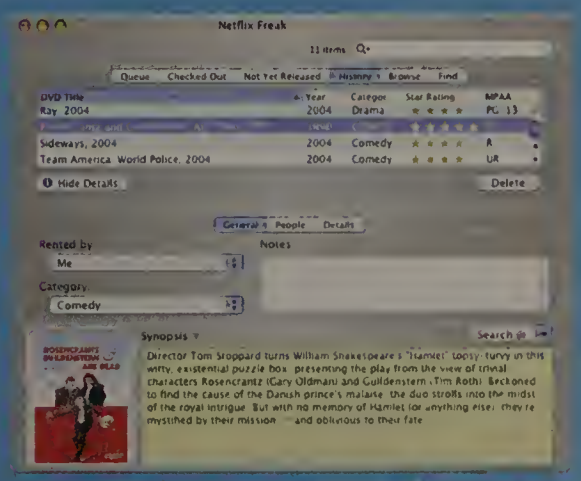
File Master Edit file permissions and attributes, get rid of stubborn files, and edit text files as the root user with FileXaminer

files at one time), Finder integration, and systemwide support for contextual menus. Other features let you resize and convert images, edit icons, and edit text files as the root user. FileXaminer even lets you create and delete user groups without having to delve into Apple's NetInfo Manager application ($10; www.gideonsoftworks.com).

MOVIE MANAGER

Netflix Freak 2.1.3

If you're a customer of Netflix, an online DVD-rental service, avoid the company's Web site and use Netflix Freak (★★★★) instead. In addition to a *much* better interface for managing your movie queue, it offers improved searching and browsing of Netflix's library to help you find the perfect movie. You can also



Action! Netflix Freak gives you total control over your Netflix account, via a much better interface than the Netflix Web site provides.

est Mac OS X update? iWillQuit (★★★★) lets you tell your Mac to go to sleep, restart, shut down, or log out after a specified amount of time, and only then. Of course, as with any logout or shutdown, you need to make sure that you don't have unsaved changes in any open documents. Keep that in mind, and iWillQuit works very well (free; macworld.com/0633).

KEYBOARD VIEWER LAUNCHER

KeyViewer 1.4

OS X's Keyboard Viewer (known as Key Caps in OS 9 and early versions of OS X) is a handy utility for finding the key combinations of seldom-used symbols and characters. But to enable it, you need to go to the International preference pane and turn on the Input menu—a hassle, as well as a waste of menu-bar space if you don't use any other features of the Input menu. KeyViewer (★★★★½) is a simple AppleScript that opens Keyboard Viewer; just stick KeyViewer in the Dock or on your desktop—or launch it with a keyboard macro utility—for quick access to Keyboard Viewer (free; www.macparc.ch).

UNIX man PAGE VIEWER

ManOpen 2.5

Most Terminal commands have corresponding manual (man) pages that explain how to use them. But Terminal's plain-text–only display doesn't make it easy to read these (often long) pages. ManOpen (★★★★) lets you view them in a customizable, user-friendly window. A pop-up menu takes you directly to the various sections of each man page; references to other commands appear as live links you can click on to view the man pages for those commands; and you can even do *apropos* keyword searches. ManOpen also adds a Terminal command (openman) that opens man pages in ManOpen directly from Terminal (free; www.clindberg.org).

ENVELOPE AND LABEL DESIGNER

Mail Factory 2.0.3

Do you wish Address Book had better features for printing envelopes and labels? Mail Factory (★★★★) lets you create custom label and envelope layouts—by dragging address elements, images, and more onto your chosen label or envelope size—and then print them with the addresses of contacts in Address Book, Entourage, Eudora, or many other contact databases. You can use the included templates for pretty much any label or envelope printer, or let Mail Factory walk you through the process of creating your own format and style ($40; www.belightsoft.com).

CONVERSION TOOL

Measure 1.0

Put simply, Measure (★★★½) is a conversion calculator with a built-in reference database of important and interesting information. But that description doesn't do it justice. This incredibly powerful program uses both mathematical- and text-based equations to calculate and convert measurements. For example, to find the distance between Chicago and Detroit, you would type `map location of Chicago`, press enter, type `map location of Detroit`, press enter, and then click on the subtract button (–). Measure's biggest drawback is that because it can do so many things, it can be a bit confusing to use ($39; www.unitsoftware.com).

RAM TESTER

Memtest 4.1

One of the most difficult hardware issues to diagnose is defective RAM, which can result in symptoms ranging from random application crashes to systemwide freezes. Even Apple's Hardware Test won't catch every chip problem. Memtest (★★★★), on the other hand, is as close to foolproof as anything you'll find. This command-line utility works in Terminal but is more effectively run in single-user mode at startup (as explained in its user guide). It checks your RAM, bit by bit, for problems—and repeats its tests as many times as you specify (free; www.memtestosx.org).

iSIGHT CAPTURE APP

MulleSight 1.0.9

Apple's iSight makes a great video-chat camera, but when you're *not* participating in a video chat, your iSight just sits there. MulleSight (★★★½) lets you use your iSight to take snapshots, which it then sends to the Clipboard for pasting into any application that supports images. MulleSight also provides access to advanced camera and compression settings, and because it supports AppleScript, scripts and other applications can access your iSight through Mulle-

quickly search your own queue and see your entire rental history. You can categorize rentals by who rented them—useful for keeping the peace at home—as well as by your own genres, and you can add your own notes to movie records. Netflix Freak now supports Netflix Profiles and multiple Netflix accounts ($15; www.thelittleappfactory.com).

RSS READER

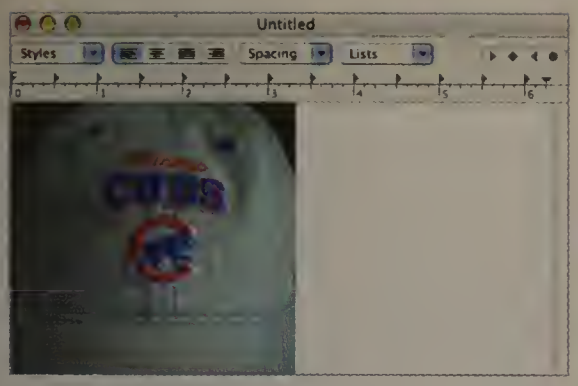
NetNewsWire Lite 2.0

Safari 2.0's RSS-reading features are nice, but if you're serious about news feeds, you need a dedicated RSS reader. The $25 NetNewsWire is my favorite, but NetNewsWire Lite (★★★★) offers many of its features for free. It organizes your RSS feeds in a three-paned interface. New articles are highlighted, as well as included in the app's Dock menu; choose a title to view the article in the main window. If you have NetNewsWire Lite installed on multiple Macs, you can share RSS subscriptions among them (free; www.[illegible]nchero.com).

BROWSER-BASED PDF VIEWER

PDF Browser Plugin 2.2.2

Tiger's Safari 2.0 provides basic PDF-viewing features, and the latest version of Adobe Reader includes a PDF plug-in for most Web browsers—but if you do a lot of PDF viewing, get PDF Browser Plugin (★★★★). It not only lets you view online PDFs directly in your browser, but also provides multiple layout options; a split view (for viewing different parts of a PDF simultaneously); and support for annotation, forms, tables of contents, and links. You can access options and control viewing via toolbar menus and keyboard commands, and you get additional printing options not available without the plug-in. You can also send PDFs to other applications or save them to



You're So Vain With MulleSight, you can easily grab snapshots from your iSight camera for use in picture-ready applications.

Sight to capture images or video (free; www.mulle-kybernetik.com).

IMAGING ASSISTANT

NetRestore 3.0.3

If you're a network administrator who supports large numbers of Macs, you'll love NetRestore (★★★★½) for its ability to restore a master disk image to target Macs locally, over a local network, or over the Internet. You can even use Apple's NetBoot system to deploy a disk image to an entire lab full of Macs. NetRestore can customize each Mac after the restoration by providing network settings, a computer name, and even an Open Firmware password. A helper app assists you in creating a master image (free; www.bombich.com).

NFS SHARE MANAGER

NFS Manager 2.8

OS X's Sharing preference pane lets you enable personal file sharing and Windows file sharing, but it doesn't give you a way to enable Network File System (NFS) shares—a popular protocol, supported by OS X, for sharing files between Unix computers. NFS Manager (★★★★) provides a convenient graphical user interface for both accessing NFS shares on other computers and configuring NFS shares on your own Macs. NFS Manager even works with NetInfo and LDAP directories to allow you to configure multiple computers simultaneously (€15 [about $18 at press time]; www.bresink.de/osx).

COLOR PICKER

Painter's Picker 2.0.6

OS X's built-in Colors palette is quite good, but Painter's Picker (★★★★) provides more-advanced color picking for people in creative fields. It includes detailed controls for choosing brightness, saturation, and hue angles; the ability to quickly find complementary or analogous colors; RGB, CMYK, and Web-safe spaces; and much more. And the best thing about Painter's Picker is that, as a plug-in that adds an additional panel to OS X's Colors palette, it's

{THREE WEB TOOLS}

Bookdog 1.2

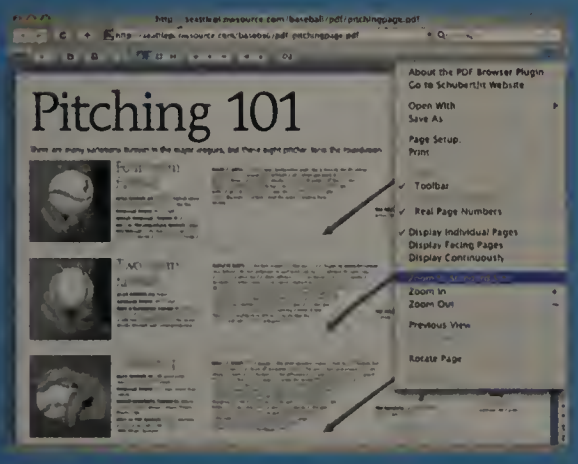
One of Safari's most glaring omissions is the ability to sort your bookmarks alphabetically. Bookdog (★★★★) provides this functionality, as well as the ability to find duplicate bookmarks. Bookdog lets you choose which folders of bookmarks should be sorted; how they should be sorted (by page name, URL, or domain); and what popular site-name prefixes (such as "Welcome to") Bookdog should ignore when sorting. You can even set Bookdog to sort your bookmarks on a regular schedule ($10; www.sheepsystems.com).

Concierge 1.4.5

Concierge (★★★½) places a drawer that adds several useful bookmark-related features on the side of Safari windows. The Scratchpad view lets you temporarily store URLs, e-mail links, aliases to files and folders in the Finder, text notes, and links to Address Book cards and groups. You can add items to the Scratchpad via drag and drop, contextual menus, or the Concierge menu (which is added to Safari's menu bar when you install Concierge); you can open saved bookmarks in Safari in the same ways. Concierge's Smart Folders show bookmarks and history items relating to any site you choose. Concierge also lets you view your bookmarks without obscuring the current Safari window. You can even add notes to bookmarks and sort your History list by domain, date, or both ($10; www.bti.net).

iSwiff 1.1

Have you ever wished you could download those Flash games and movies you find on the Web, so you could play them later? iSwiff (★★★½) lets you do just that, provided you've already installed Macromedia's Flash browser plug-in. Just drag the downloaded Flash file onto iSwiff to play it. (You can use File Juicer [see page 50] to extract .swv files from Windows .exe archives.) The developer's Web site even provides a number of useful links to Flash games on the Web (free; www.echoone.com).



A Better PDF PDF Browser Plugin bests Safari's PDF viewing capabilities, and it costs the same amount—nothing

disk (home, education, or noncommercial use, free; commercial site license, $69; www.schubert-it.com).

FINDER-WINDOW PRINTER

Print Window 3.1.3

OS X lacks the ability to print a Finder window's contents. Print Window (★★★★) adds this ability and a lot more. You can print the contents of any Finder window via drag and drop, by pressing a keyboard shortcut, through the Services menu, or by selecting the window from within Print Window. You get the added bonus of choosing what to print: complete file and folder information or just names, the visible contents of a folder or all subfolders, and icons or no icons. You can even include custom headers, sort listings, and choose the printing font. The new Advanced version adds the ability to print formatted CD and DVD covers, selectively print subfolders, and customize information display (free; Advanced version, $15; www.searchworksolutions.com).

COLLABORATION TOOL

SubEthaEdit 2.1.2

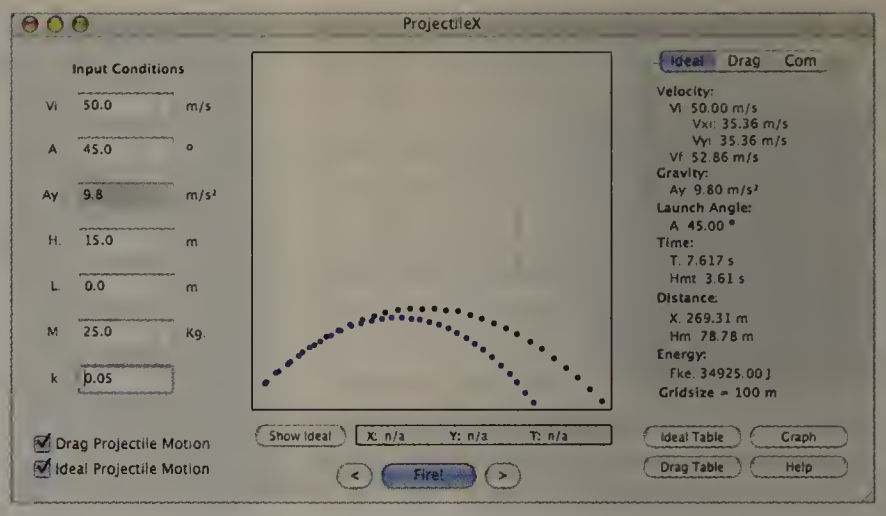
Letting several people simultaneously make changes to a document has tradi-

available systemwide ($16; www.oldjewelsoftware.com).

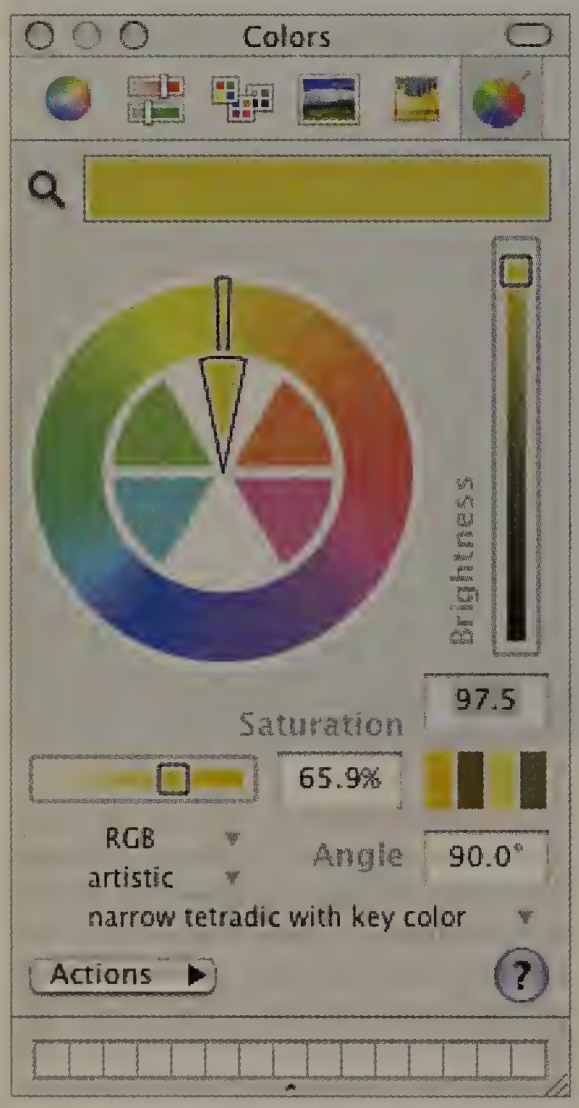
SCIENCE PROGRAM

Physics 101 SE 4.1

For physics teachers and students, Physics 101 SE (●●●●½) is a great tool for figuring out the results of physics formulas and understanding how those results were calculated. The 80-plus formulas are organized by topic (work, momentum, thermodynamics, electricity, optics, and so on) and let you type in known values to solve for an unknown. And when you click on the question-mark button next to a formula, Physics 101 SE will provide an explanation of the formula and display the calculation that was performed. The application also includes special modes for simulating projectiles, building virtual circuits, and more ($10; www.praetersoftware.com).



Science Lab Physics 101 SE makes understanding complex science a bit easier.



Color Master Painter's Picker makes short work of advanced color picking in OS X.

APPLICATION MAKER

Platypus 3.1

If you can write a shell script but have no clue how to create an OS X application, Platypus (●●●●) is for you. It lets you create an app based on a shell script (or other script, such as Perl, Python, PHP, Ruby, Expect, Tcl, or AppleScript)—you get the functionality of the script in the user-friendly environment of a graphical application. The resulting application will even support drag and drop—when you drag a file onto the app, the file's path is passed to the underlying shell script as an argument. You can also add features such as progress bars and text-input windows (free; macworld.com/0692).

INTERNET-STREAM RECORDER

RadioLover 1.4

RadioLover (●●●½)—a descendant of the popular StreamRipperX—lets you record MP3-based Internet radio (both streams listed in iTunes and those you enter manually) and adds the resulting recordings to iTunes. You can record multiple streams simultaneously, schedule recordings, and opt to automatically split recordings at set intervals. RadioLover can even split recordings that include track information into individual tracks and then tag them for you ($15; www.bitcartel.com).

ON-SCREEN NOTE APP

Sidenote 1.7

Do you like Stickies but want something a bit less conspicuous? Sidenote (●●●½) hides a notepad that supports rich text, images, and PDFs on the edge of your screen—the notepad appears when you move the cursor to the screen edge, and it slides off the screen when not in use. You can create multiple notes and use the keyboard or a pop-up menu to switch between them. You can even drag content from the Finder or another application to Sidenote; the Sidenote notepad slides out to accept the content (free; www.chatelp.org).

SCREENSHOT CREATOR

SnapNDrag 1.6.1

If you don't need the power and features of Snapz Pro X but find that OS X's Grab utility is too limiting, SnapNDrag (●●●●)

tionally been a recipe for disaster. SubEthaEdit (●●●●●) makes such collaborative efforts feasible—even enjoyable—by allowing an unlimited number of participants to join an editing session over the Internet or via Apple's Bonjour (formerly Rendezvous). Each person's contributions are tracked in a different color, and each participant can see what other participants are doing in the document. Integration with Apple's iChat and Mail means that you can chat with or e-mail participants on the side. SubEthaEdit is also a full-fledged text editor, with powerful formatting and search-and-replace functions, and it provides automatic syntax highlighting via customizable styles. You can even export your documents to HTML, complete with author metadata. A Unix command-line tool lets SubEthaEdit interact with Terminal (noncommercial use, free; commercial use, $35; www.codingmonkey[illegible].de).

iTUNES CONTROLLER

Synergy 2.0.1

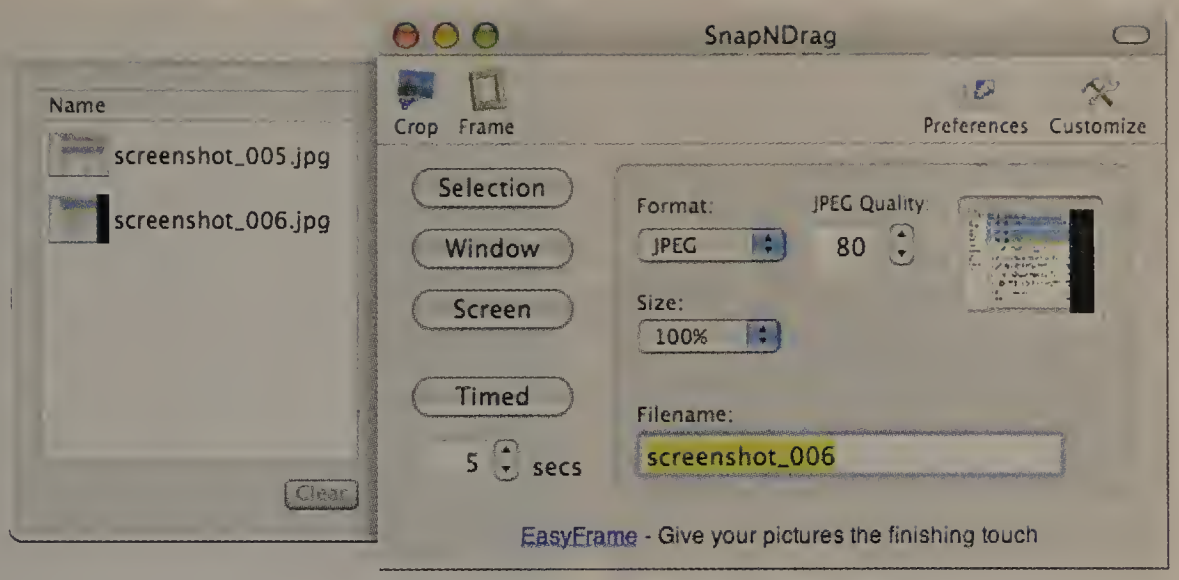
There are many iTunes controllers and information displays out there, but none works as well as Synergy (●●●●●). It provides systemwide hot keys for playback and volume control; a snazzy, translucent informational display (track, artist, album cover, and so on) that fades in and out at the start of each track (or at your command); and optional playback controls—which you can customize with downloadable button sets—in the menu bar. (The playback controls also provide a menu that lists playlists and recent tracks.) The latest version of Synergy features support for Growl (a global notification system for OS X), as well as the ability to launch AppleScripts or other items on track or status

may be the screenshot utility for you. Click on a button representing the type of shot you want to take—screen, window, selection, or timed—and then choose the desired screen, window, or part of the screen. A small preview of the shot appears; you can then save the shot, drag it to the desktop, or drag it directly to an e-mail message or another application. The Pro version adds hot keys and image scaling (free; Pro version, $5; www.yellowmug.com).

SHORTCUT MANAGER

Spark 2.0.1

OS X lets you assign keyboard shortcuts to menu items, but Spark (4½) lets you do much more, such as create hot-key shortcuts that run AppleScripts, launch applications, open documents, control iTunes, and execute system actions (log out, sleep, restart, and shut-down). You can also make the shortcuts conditional (do different things depending on the application). The program allows you to import and export its shortcut libraries—great for using the same shortcuts on different computers. And Spark can make an HTML cheat sheet of your hot keys for you (free; macworld.com/0693).



Screen Capturer SnapNDrag makes taking screenshots easy, and it does more than OS X's Grab application.

Cut It Short With Spark, you can make hot-key shortcuts for launching apps, opening documents, controlling iTunes, and more.

iTUNES SYNC HELPER

syncOtunes 0.95

If you've got multiple Macs, chances are your iTunes Libraries are out of sync. They don't have to be. With syncOtunes (3½), you select your current Mac's iTunes Music Library.xml file, connect to another Mac through personal file sharing (which you can enable in the System Preferences Sharing preference pane), and then select that Mac's Library file. syncOtunes will list missing files from each Library, and it will then let you decide whether to copy the missing files in both directions. Unfortunately, you then need to import the new tracks into iTunes on each Mac—syncOtunes has some useful features that make the process easier, but it would be nice if the program performed this step automatically (free; homepage.mac.com/oligrob).

SOFTWARE KVM SWITCH

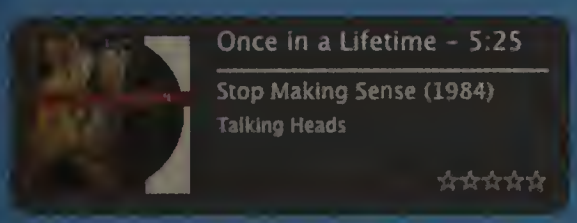
teleport PR3

With teleport (4), you can use one keyboard and one mouse to control multiple Macs on a local network. However, instead of a hardware KVM (keyboard, video, mouse) switch, teleport uses a clever bit of software engineering that works much like screen spanning. You install and activate teleport on each Mac; then you arrange the virtual displays on the master computer. When you move the mouse cursor off the edge of one screen, it moves onto one of the others—you can then use your mouse and keyboard as if they were connected to that computer (free; www.abyssoft.com).

BREAK REMINDER

Time Out 1.3

Do you spend too much time in front of your Mac? Do you forget to take breaks? Time Out (4) reminds you at regular intervals, to, well, take some time out from your computing. Or more accurately, it *forces* you to do so by dimming your screen for the duration of the break. (You can postpone or skip a break if you're in the middle of an important thought.) And if you



Take Control With Synergy, you don't need to switch to iTunes to change tracks.

changes (€5 [about $6 at press time]; [illegible]).

WINDOW MODIFIER

WindowShade X 3.6

WindowShade X (4) brings OS 9's popular Window Shade effect to OS X. Double-click on a window's title bar, and depending on your preference, the window rolls up and out of the way, becomes transparent, minimizes in place instead of to the Dock, or hides completely. You can also assign actions to different types of clicks (such as control-double-click). As a bonus, you can customize window shadow settings ($10; [illegible]).

USER SWITCHING UTILITY

WinSwitch 3.1

With Tiger, Apple finally lets you display the Fast User Switching menu as a short user name or a user icon, so it doesn't take up so much space. But WinSwitch (4)—one of my favorite Panther utilities for this feature—is still quite useful. In addition to letting you display a user's initials in the menu bar, customize the appearance of menu contents, and assign a keyboard shortcut to switch to the Login window, WinSwitch can automatically launch applications or open documents when you switch to or from certain accounts. It can even list the root user—if enabled—in the Fast User Switching menu (free; [illegible]).

remember to take a break on your own—or just go to get a cup of coffee—Time Out counts that as a break (free; www.dejal.com).

TRANSCRIPTION AID

Transcriva 1.0.3

If you've been struggling with transcribing content from a digital audio recorder, then Transcriva (★★★★) can help (although you still have to do the transcription work yourself). With its QuickTime support for many audio formats, mouse- or keyboard-controlled playback, and variable playback speeds, you can easily listen to your recordings as you transcribe. Even better, the program's chat-like interface, with automatic time coding and support for multiple speakers, makes keeping track of conversations and interviews easy. There's even a follow-along mode for checking your transcriptions—the text scrolls in time with the audio file ($20; www.bartastechnologies.com).

DESKTOP PICTURE FRAME

VirtuFrame 2.7

Desks used to hold picture frames where computers sit today. But if you've got some spare room on your Mac's desktop, you can add a virtual picture frame that rotates through your favorite images. Just point VirtuFrame (★★★★) at a folder of pictures (your iPhoto Library folder, for example), choose the frame size and style, and specify the rotation period. VirtuFrame then displays your images as though they were in a real frame (well, a real frame that changes photos automatically). You can also choose to keep VirtuFrame floating on top of all other windows, so you never miss a picture (free; www.trilateral systems.com).

DISK BROWSER

Volumes Menu 1.0

Volumes Menu (★★★½) lets you quickly browse mounted volumes via a hierarchical menu in the menu bar. The app is a spin-off of Butler (a file launcher, bookmark manager, Web-search utility, pasteboard extension, and more) and includes some of Butler's volume-browsing functions (free; macworld.com/ 0645).

Take a Breather Time Out encourages you to get up from your Mac at regular intervals and stretch.

FINDER UPDATER

WindowsUpdater 1.1

If you've ever made a change to a folder—especially on a server—and then sat there waiting for the Finder to update the folder's contents, WindowsUpdater (★★★★) is for you. Click on the Update Windows button to immediately update all Finder windows, including your desktop. Or set WindowsUpdater to periodically refresh all windows automatically (free; www.choosefile.com).

WINDOWS SHORTCUT ENABLER

WinShortcutter 1.2

OS X works well on Windows networks, but it still has trouble with Windows *shortcuts* (the Windows version of OS X aliases)—double-clicking on a shortcut file on a Windows file server doesn't work. WinShortcutter (★★★★) fixes this problem, giving you easy access to Windows shortcuts. If the shortcut's target resides on a different server, WinShortcutter mounts that server, using your choice of SMB or AFP. WinShortcutter can even create an OS X alias next to the shortcut file, so other Mac users on your network won't have the same problem (free; www.lobotomo.com).

SYSTEM LOG TOOL

X-Statistics 1.2

Few people can make sense out of OS X's various system log files. But even those who can are sure to find X-Statistics (★★★½) useful. It examines the log files and then presents you with a graphical timeline of major system events—when the computer was running, sleeping, or shut down; when you had system or application crashes; when (and which) volumes were mounted; and when PPP or VPN data was sent or received ($10; www.clauss-net.de/xstat). □

Senior Writer DAN FRAKES is *Macworld*'s *Mac Gems* columnist and the reviews editor of Playlistmag.com.

{ THREE COOL MENU-BAR ITEMS }

Ardiem 1.1.1

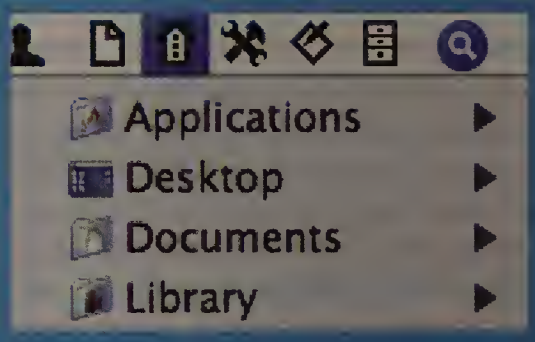
If you have an external FireWire optical drive, Ardiem (★★★★) lets you not only open its tray and eject a disc via a menu-bar icon (much as OS X's menu extra does), but also assign a different keyboard shortcut to each internal and external drive you have (free; www.chaoticminds.org).

iTunesRating 1.0.2

For an easier way to rate your iTunes tracks and view existing ratings, iTunesRating (★★★★) puts an iTunes ratings bar in the menu bar. You just click on a star to set or change the current track's iTunes rating. The app also lets you change its star icons to your own images (free; macworld.com/0631).

XMenu 1.7

XMenu (★★★★) lets you add hierarchical menus similar to OS 9's Apple menu to OS X's menu bar—for the Applications and Developer folders; your Home folder; your Documents folder; and the XMenu folder, the contents of which you can customize. You can choose to display the menus to the right or left of Apple's menu items, and there are other sorting and display options. Choosing an item from one of XMenu's menus opens it, or you can use modifier keys to perform one of several actions on the item (free; devon-technologies.com).



The Apple Menu Returns Add hierarchical menus to OS X's menu bar with XMenu.

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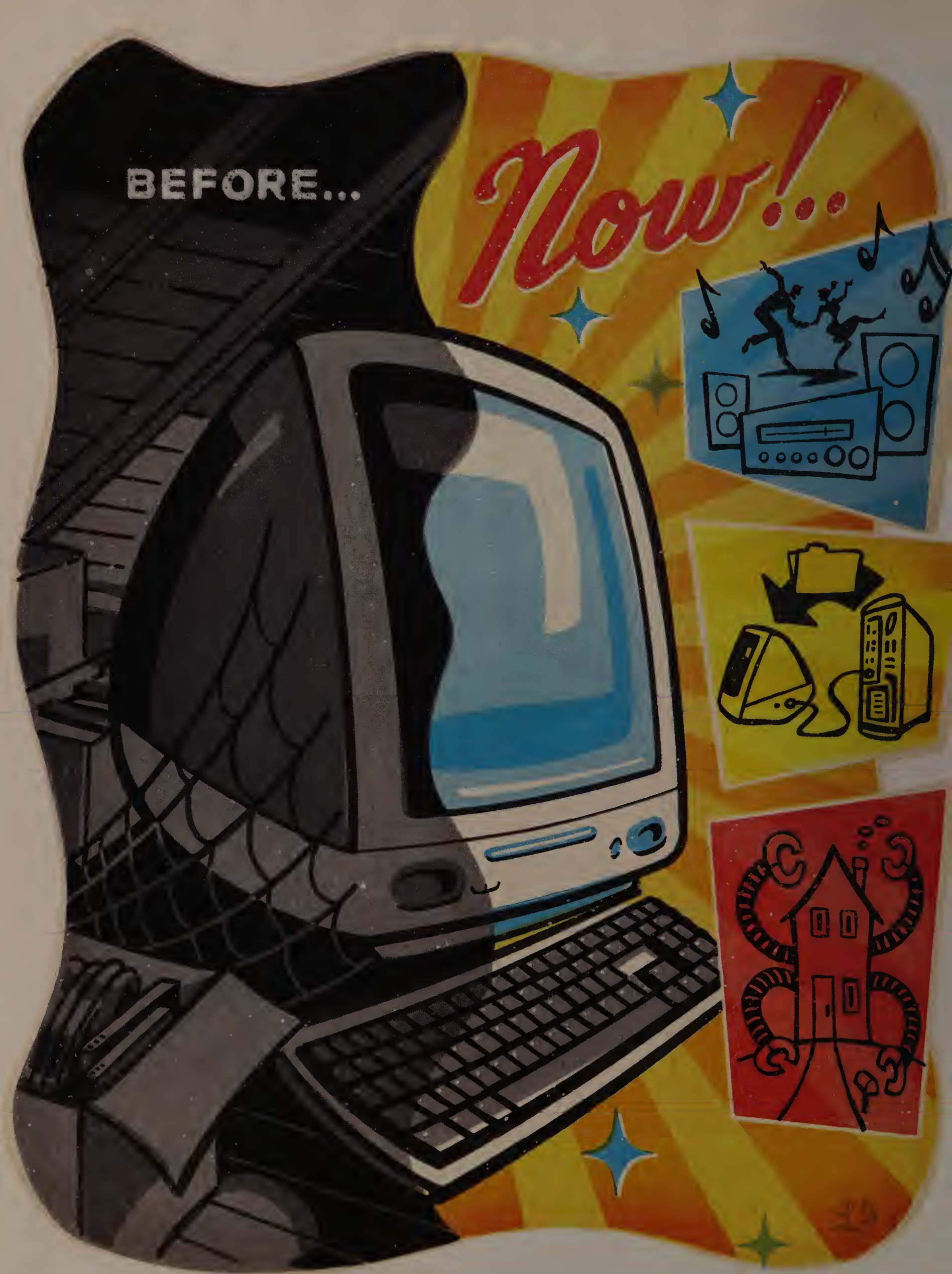

BEFORE...
Now!...

GOT A SPARE MAC? HERE'S HOW TO SET IT UP AS AN AUDIO JUKEBOX, A BACKUP SERVER, OR A HOME-AUTOMATION SYSTEM.

OLD MAC, NEW TRICKS

What do you do with your old Mac when you buy a new one? Stick it in a closet and forget about it? Donate it to a charity? Recycle it—if you can?

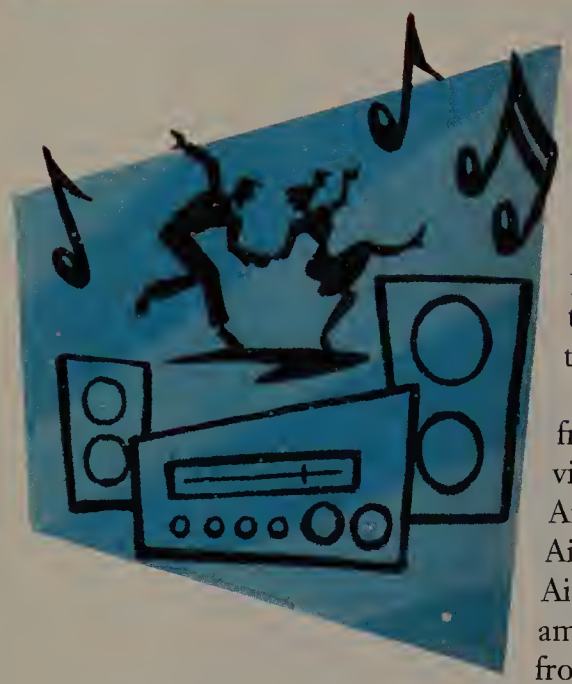
Whatever you've done in the past, don't do it again. There are plenty of good ways to use a spare Mac, from storing and playing your digital music to backing up a home or small-office network, or even turning your lights on and off automatically.

And in most cases, setting up a Mac to take care of such chores requires little more than the Mac, a few cables, some software—and our easy instructions.

ILLUSTRATION BY LARRY JONES

Audio Jukebox

BY KIRK McELHEARN



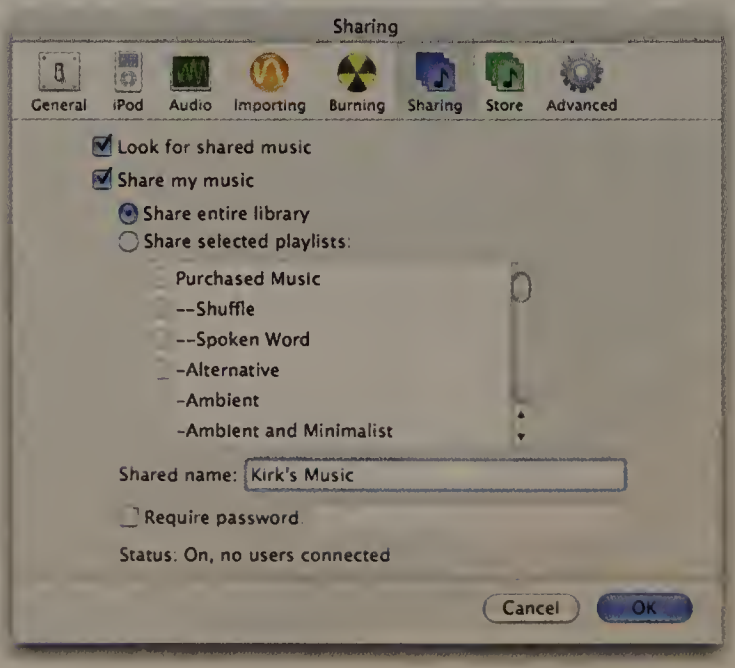
If you've spent any time at all ripping your CD collection to your Mac, you've probably got gigabytes of music sitting on your hard drive. But how do you play your Mac-based music library on your living-room stereo—or, for that matter, share it with the rest of the house?

Of course, you could send music from your main Mac to your stereo via AirTunes, which is built into AirPort Express. If you have an AirPort network, you connect the AirPort Express's audio jack to your amplifier, select the AirPort Express from any copy of iTunes running on your network, and stream your music directly to the stereo. The problem is that you can control iTunes only from that remote Mac. Attaching a Mac directly to your stereo lets you control everything right there.

What You Need

The Mac To pull this off, you need a Mac with speed, storage, and silence. You could get by with a 400MHz G3, Apple's minimum for iTunes. But the faster the system, the better. For my music system, I use an 800MHz iBook G3. I like the laptop because it's relatively unobtrusive, and it has its own screen and keyboard, so I can control it without bulky external accessories.

As for storage, that depends on how much music you want to store. If your music Mac's hard drive is too small, you can add an external FireWire drive. Easy to connect and use, such drives can add as much as 400GB to your system without busting your budget. My system uses an external 250GB drive.



Share the Music Tell iTunes to share your music server's music and to look for shared music on your network, and all your tunes will be available in one place.

Your server should also have an AirPort card, so it can share its library with other Macs and find shared music libraries on your network. This is also great when friends drop by with their iTunes-equipped laptops (either Macs or PCs), because you can sample one another's music.

And in order to pass the living-room test, the Mac should be silent—*really* silent. While you may not mind the whoosh of a computer fan or the rumble of a wonky hard drive in your office, you won't want to hear anything like that when you're deep into the quiet parts of Mahler's Symphony no. 3.

If possible, put the hardware in a cabinet, to dampen any sounds it makes. If you get an external hard drive, buy one without a fan. And if you're using an old iBook or PowerBook, don't set it directly on a shelf: heat will build up around the processor, and the fan will spring into action. You can simply raise the laptop on a couple of thin pieces of wood so air flows underneath; as long as there's air moving around the Mac, you shouldn't hear a single decibel.

The Connections To connect your Mac to your stereo, you'll need a ⅛-inch-to-RCA cable, which will run from the computer's line-out port to your amplifier's auxiliary input.

The Software iTunes is all you need.

How to Set It Up

First, you have to get music onto the Mac. If your laptop has an AirPort card, you can rip CDs on any Mac and then send their tunes over the network to the music server; the only drawback is that you have to manually add the music to the iTunes library on the server. If you want to buy music from the iTunes Music Store, do so directly from the server. That way, you won't have to worry about copying from one Mac to another. But don't forget to back it up!

Once you've got the music loaded or accessible, set iTunes to launch whenever your server starts up: In the Accounts preference pane for the user account you'll be using, add iTunes to the list of items that load at startup. (Of course, you may not want to ever shut the music Mac down; instead, you can shut the lid to put it to sleep.) Then open up iTunes' Sharing preference pane, and select both Look For Shared Music (to find other shared libraries) and Share My Music (to share the library on your music server with other Macs on your network).

That's it! Your music server should be ready to go.

KIRK McELHEARN is the author of several books about the Mac and the iPod, and he is a coauthor of *Mastering Mac OS X, Tiger Edition* (Sybex, 2005).

Video on Demand

You can also set up your spare Mac to record and play back video.

It's no secret: Personal video recorders like the TiVo are really just special-purpose computers configured to record TV shows. So when you find yourself with a spare computer on your hands, you may wonder if you can turn it into a TiVo-like video jukebox.

Doing so isn't that tricky. But before you do anything, you should ask yourself whether it really makes sense. Instead, should you just buy a genuine TiVo and subscribe to its TV-recording and -scheduling service?

The pro-TiVo argument goes something like this: Elgato's EyeTV (♦♦♦♦; macworld.com/0629) costs around $350 and requires a recent Mac and a ton of disk space. To have the shows you record on your Mac play on your TV, you'll need to fork out another $250 or so for Elgato's EyeHome (♦♦♦♦; macworld.com/0629) or some other scan converter. Your total costs, not including the Mac itself, are about $600. By comparison, TiVos cost about $200, with another $300 for lifetime service. (You could opt for the $13 month-to-month contract.)

Out of the box, TiVos work with basic cable, digital cable, antenna reception—just about any video feed you might want. And none of the software currently available for the Mac can replicate TiVo's trick of tracking your viewing habits and recording shows it *thinks* you'll like.

But there are times when using a Mac as a TiVo makes sense: What if, for example, you live in a country that doesn't yet have TiVo service? Many people outside the United States can't get it. Second, you may feel a little nervous about signing up and paying for a lifetime subscription to anything, much less a tech service like TiVo. What if the company goes under or is bought out? At least with the Mac option, you own the hardware yourself and, as long as you've got access to TV broadcasts, you can record programs as much as you want. And third, you may just be a die-hard do-it-yourselfer.

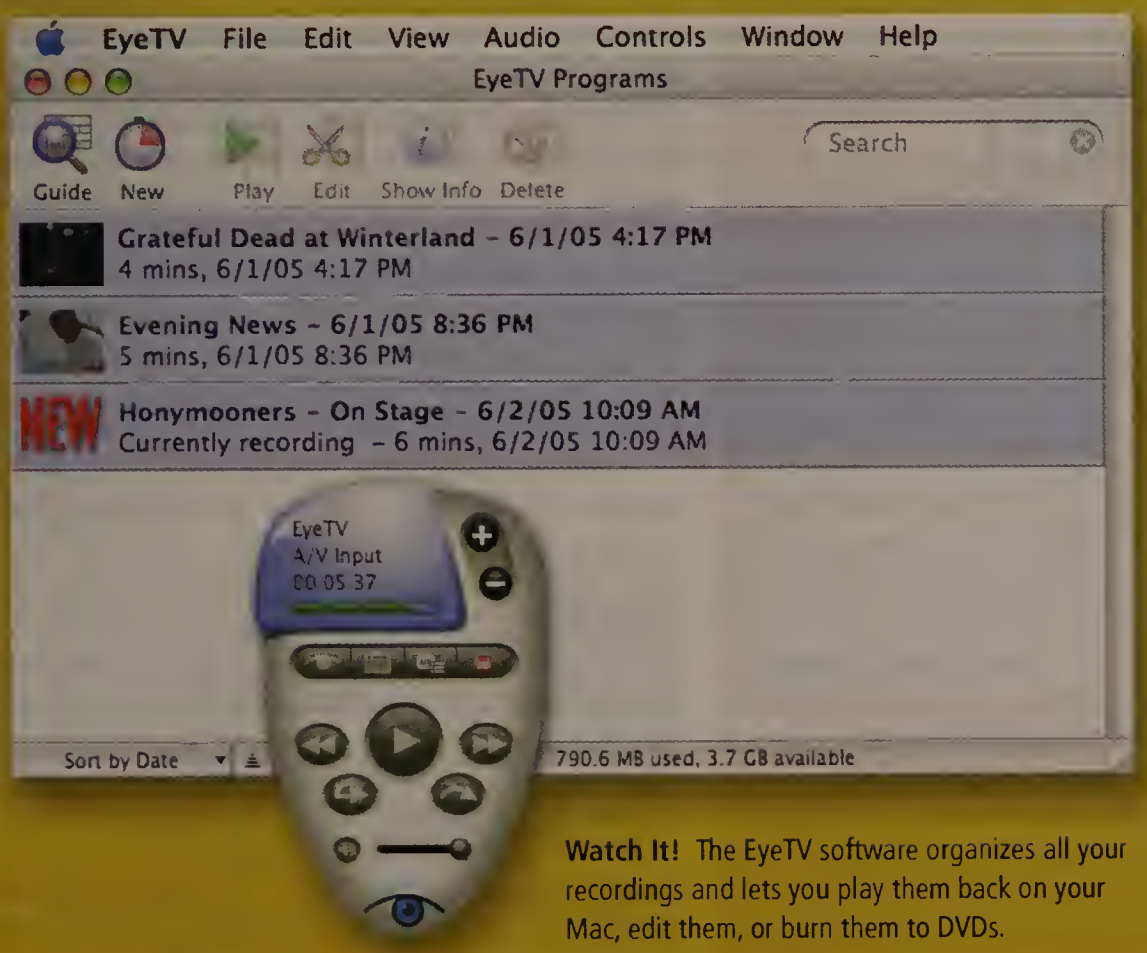
Whatever your reasons, if you do decide you want to turn a spare Mac into a video jukebox, here's how.

What You Need

A video sever requires a more powerful processor than a music-only setup—a G4 Mac at least.

To that Mac, you hook up an Elgato EyeHome, which lets you play back Mac-stored video, music, and even photos on your TV and stereo. (It can't play protected AAC files, though, so it's not the ideal solution if you buy music with iTunes.)

To record video to the Mac from the TV, I'd go with Elgato's EyeTV—partly because it's easy to work with, but also because it interfaces so well with the EyeHome. The EyeTV lets you program, record, organize, and edit video; you can export your recorded video in many formats, either to save for a rainy day or to burn to DVDs using Apple's iDVD or iMovie, or Roxio's Toast. The EyeTV 200 (there are several different versions of the device) will also digitize analog video, so you can turn those shelves full of bulky VHS tapes into slim stacks of DVDs.



Watch It! The EyeTV software organizes all your recordings and lets you play them back on your Mac, edit them, or burn them to DVDs.

How to Set It Up

You can use a crossover cable to connect the EyeHome directly to a Mac, or you can connect the EyeHome to your network—either directly via Ethernet or using an AirPort Express (or similar device) as a wireless bridge. (You'll need AirPort Extreme, or 802.11g, to stream video; you can stream music and photos with regular AirPort, or 802.11b.) Then connect the EyeHome to your TV and stereo.

You connect the EyeTV to your TV, cable box, or satellite decoder; then you connect it to your Mac with a FireWire cable. The EyeTV gets power over the FireWire cable, so you don't even need to plug in an AC adapter.

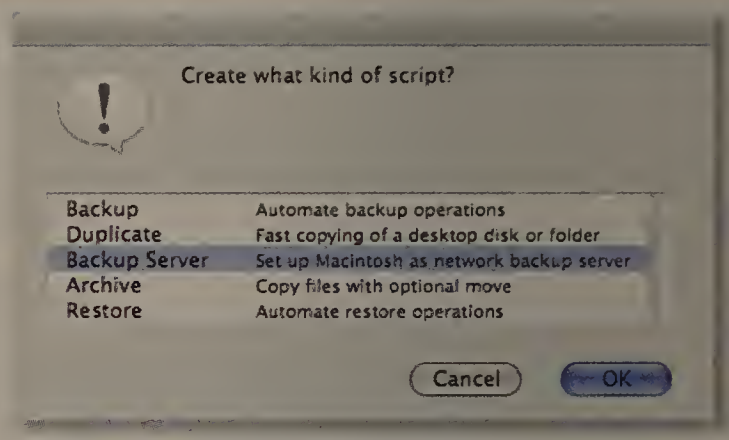
Once you've got all that hooked up, you'll need to install software for both the EyeHome and the EyeTV on the Mac you've designated as a video server. Setting up the EyeHome software is easy; the installer adds a preference pane to System Preferences and then opens it. Click on the Start button, and the EyeHome application will launch every time you start up your Mac. The EyeTV is even easier: Just copy the EyeTV application to your hard drive.

When you turn the EyeHome on, it should automatically find your video Mac; if you have several Macs on your network running the EyeHome software, you can select any of them and access its content. You can start accessing your music, movies, and pictures, and you'll even have limited Web access. The EyeHome automatically spots any content you record with the EyeTV—so with just a few clicks, you can play back anything you've digitized or recorded from the TV.

Backup Server

BY JOE KISSELL

If your home, like mine, has more than a couple of Macs, backing up each one individually can be quite a chore. You can make your life easier—and keep your data safer—by setting up an old Mac or a Mac mini as a dedicated backup server. It'll do all the heavy lifting of backing up every computer regularly, without requiring your constant assistance.



To Protect and to Serve Retrospect's Backup Server script helps you configure client and backup drives.

What You Need

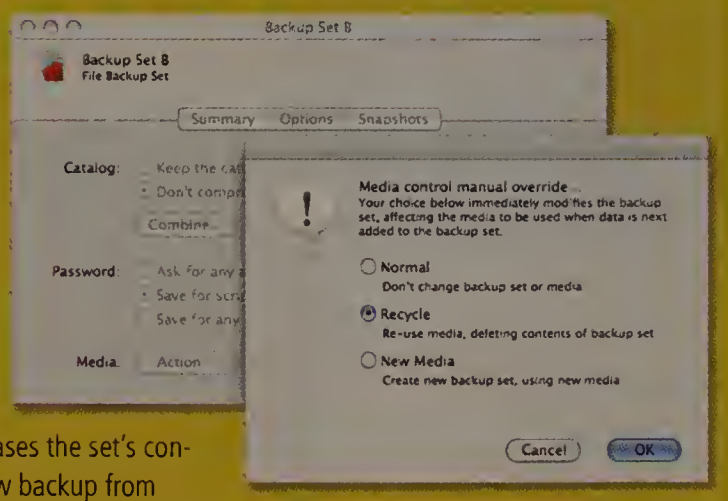
The Mac For this project, you'll need a Mac with FireWire or USB 2.0 ports, at least 256MB of RAM, and OS X 10.1.5 or later. This Mac (and the other machines) will need a network connection. An AirPort network will work, but for faster backups, connect the computers to a wired Ethernet switch or hub.

To determine the minimum hard-drive size, add up the sizes of the folders you want to back up on each of your Macs, and multiply the total by 1.5. If the drive on your designated server isn't big enough, add one or more external drives. These not only offer additional capacity but also enable you to store one of your backups off-site for safekeeping.

Software I've tested dozens of backup programs, and each has its merits. But I always come back to EMC Dantz's Retrospect Desktop (●●●½; $129 [but often available for less than $90]; macworld.com/0623).

Retrospect Desktop can back up the computer it's installed on (the server) and three other machines (the clients); you can purchase additional client licenses if needed. Retrospect Desktop has several distinctive features, but most important for this project is its Backup Server script. Backup Server periodically checks to see whether any of the clients on the network haven't been backed up recently; if that's the case, it performs the backup. So you don't have to worry about missing a scheduled backup if a computer is turned off, asleep, or offline (for instance, a PowerBook you've taken to the office).

Do Your Recycling



Eventually, your external drive(s) will fill up. And even if it's quite capacious, Retrospect's performance can decrease when backup sets get very large. So I recommend recycling your backup sets every few months or so. This erases the set's contents and starts a new backup from scratch. (If you use multiple drives, stagger the recycling so you always have a reliable copy.) To do this, stop Backup Server and go to Retrospect's Configure pane. Click on Backup Sets and select the set you want to recycle. Click on Configure, and then go to the Options pane and click on Action. Select Recycle, dismiss all the dialog boxes, and save the script. Choose Run: Start Backup Server. On the next run, your old backup set will be replaced.

How to Set It Up

While there are many types of backups, I'm going to focus on just one: an additive incremental archive. Rather than making complete, bootable duplicates of all your Macs' hard drives, this archive backs up just the most-important files. After the initial backup, each successive backup copies only the files that have changed since the previous one—the older copies are saved, too, in case you accidentally change or delete a file and need to go back to a previous version.

If you've already added your backup server and the systems you want to back up to a network, you're ready to begin.

Plug It In

First, plug your external hard drive(s) into your server. Then select each backup drive, choose File: Get Info, and make sure the Ignore Ownership On This Volume option at the bottom of the resulting window is deselected.

Install Retrospect

Retrospect uses a standard, self-explanatory installer. After you install it, visit www.dantz.com to see

whether any updates are available; if there are, install them, too.

Next, install Retrospect Client on the other computers. The Retrospect CD (or disk image, if you downloaded it) includes a folder containing the client software. After you install Retrospect Client on each machine, launch it and make sure it's turned on. You can leave all the preferences at their default settings for now.

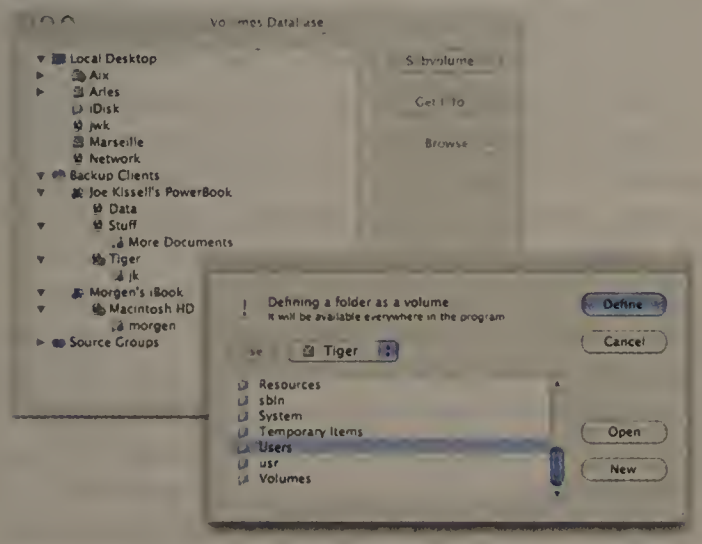
Configure Retrospect

Back on the server, open the Configure pane in Retrospect's main window, and click on Backup Sets. Click on New, choose File from the Backup Set Type pop-up menu, and enter a name for your backup set. Click on New, navigate to the hard drive you're using for this backup set, and click on Save. Repeat this procedure for each backup drive, and close the Backup Sets window when you're done.

Now click on Clients in Retrospect's Configure pane. Each client that's available on your network should appear in the list. Select one and click on Configure. In the General pane, make sure Selected Volumes is selected in the Backup pop-up menu, and then go to the Volumes pane and select each of the machine's volumes you want to back up (even if there's only one). Repeat this procedure for each client.

Finally, go to the Automate pane, select Scripts, and click on New. Choose Backup Server as the script type and click on OK (see "To Protect and to Serve"). Enter a name for the script and click on OK again to display the script's options.

What to Back Up In most cases, you'll want to back up only part of a volume, such as your user folder. To do this, click on Sources and then on Add to display all local and network volumes. Select a volume and click on Subvolume. Navigate to the folder you want to back up, select it, and click on Define (see "Voluminous Folders"). Repeat for as many subvolumes as necessary. In general, you should back up each user's Home folder (/Users/*user folder*) and any other folders containing personal files. After defining subvolumes, ⌘-click to select all the volumes or folders you want to back up. Click on OK, and then click on OK a second time to close the Sources dialog box.



Voluminous Folders Retrospect wants to back up entire volumes—but you can back up just one folder by defining it as a subvolume.

What Not to Back Up To omit certain types of files, click on Selecting. In the window that appears, click on More Choices. Under And Exclude Nothing, choose Selector from the pop-up menu (see "Being Selective"). From the Selected By pop-up menu, choose the kind of file you want to exclude. (For example, to exclude MP3 and AAC files, choose Music.) Click on OK, and add more exclusions if you wish. Click on OK again to dismiss the dialog box.

Where to Put It In the Backup Set Selection window, select the drive(s) you want to back up to, and click on OK; click on OK again to dismiss the dialog box.

How Often to Back Up By default, Retrospect backs up your drive(s) once a day, and I recommend keeping that setting. But if you want to change the interval, click on Options and make your selections. Then click on OK again.

When to Run the Server The backup server will attempt to back up clients only during the times you designate. The default setting (Always Active) is usually best, but to restrict the backup server to certain times or days, click on Schedule and make your selections.

Now close the Backup Server window, click on Save, and close the Scripts window. To activate the

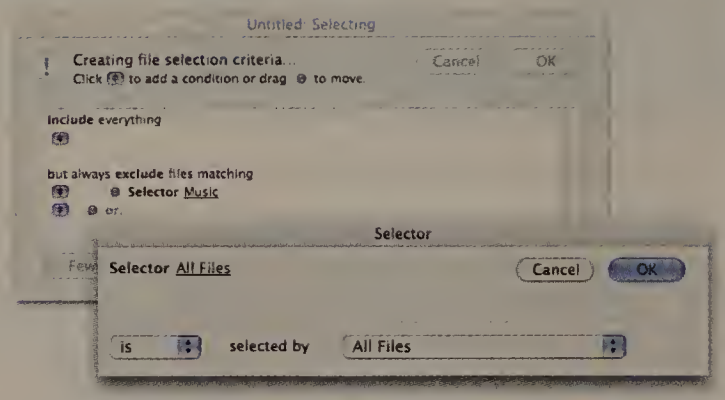
Restoring Files

Having a great backup is useless if you can't recover files when you need them. To restore files, follow these steps:

1. Stop Backup Server if it's running. In the Immediate pane, click on Restore.
2. Select Restore Files From A Backup and click on OK.
3. In the list at the top of the window, select a backup set (typically the one with the most recent date). The bottom part of the window lists the most recent snapshot (a complete list of files at the time of each backup) for each backed-up volume. (To see previous versions of the files, click on Add Snapshot and select the snapshot with the desired volume and date.) Click on OK.
4. Choose a destination for the restored files and click on OK.
5. After Retrospect compiles a list of all the files in the current snapshot, click on Files Chosen to display them. Select the files and folders you want to recover, and then click on Mark. When you're finished, close the window.
6. Click on Restore. The selected files will be copied to the destination you specified.

Backup Server (continued)

Being Selective Retrospect's Selector feature allows you to exclude or include files by type (such as Music).



server, choose Run: Backup Server. A small status window will replace the main Retrospect window. (To stop Backup Server and return to the main window, close this window.) Retrospect will begin backing up the client machines on the schedule you set.

After all this clicking and configuring, your server should require almost no intervention. But you should perform test restorations occasionally to make sure everything is working right. (It's no fun to find out that you set something wrong after you've lost files to a hard-drive crash!) You'll sleep better knowing that your backup server is minding your files.

JOE KISSELL is the author of the Take Control of Mac OS X Backups e-book (www.takecontrolbooks.com). His secret identity is Curator of Interesting Things for InterestingThingOfTheDay.com.

Home-Automation System

BY GORDON MEYER

Automating your home—so the lights turn on automatically when darkness falls, the heat turns on a half an hour before you're due home, or a security camera watches the house while you're out—isn't that hard to do. With a spare Mac and a bit of extra hardware, you can do it in a weekend.

What You Need

The Mac Any Mac that can run Mac OS X Panther (10.3) or later, and therefore has built-in USB ports, is a good candidate. You can use an older Mac, but you'll also need a USB-to-serial converter. If you're using OS 9, your software options will be limited.

X10 Modules You need hardware devices to connect your computer to your household appliances. For Mac users, the best choice is home-automation equipment that uses the X10 home-automation standard. While there are other technologies out there, X10 is the most cost-efficient and best supported; because it's been around since the 1970s, there are plenty of compatible devices.

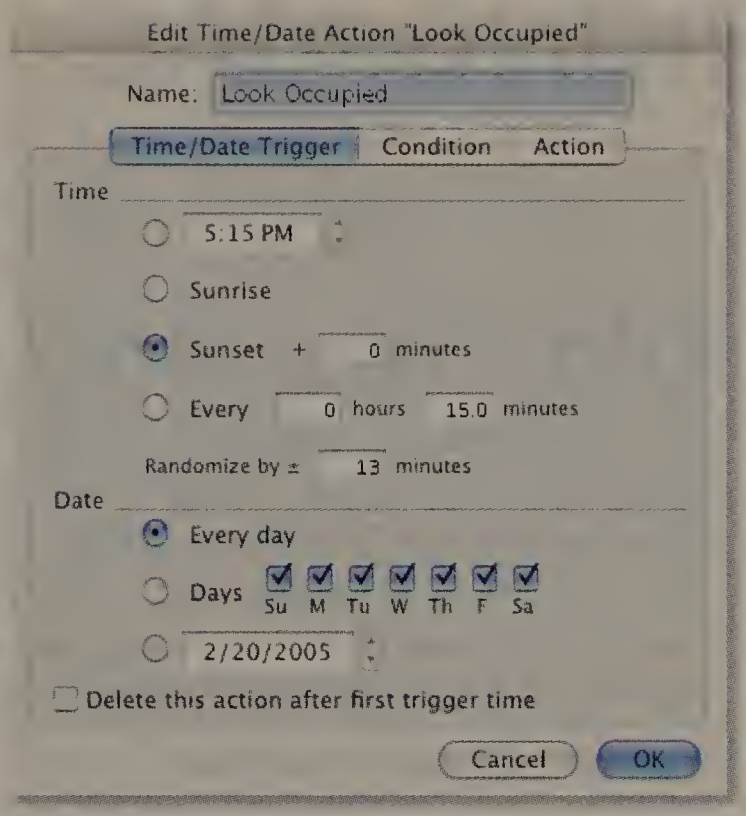
You'll need an X10 module for each appliance you want to control. These modules are small boxes, about the size of two decks of cards, that you plug into the wall. You then plug the lamp (for instance) you want to control into the module. Each module is assigned a unique address, which your Mac uses when issuing commands. Those commands travel over your existing power lines. When a module is told to turn on, turn off, or dim a light, it does so by regulating the amount of power going to the lamp.

The best deals on modules are often at X10 Corporation's Web site (www.x10.com), but Smarthome (www.smarthome.com) has a larger and more sophisticated selection. Stores such as Radio Shack and Home Depot also usually carry a small selection.

X10 Interface You also need a way for your computer to communicate. Smarthome's PowerLinc USB ($38; macworld.com/0624) interface is the least-expensive option and a good choice if you want to ease into home automation. The similarly named PowerLinc Controller USB ($70; macworld.com/0625) can also operate in a rudimentary fashion when it's disconnected from your Mac (if you use the OS X–only application Indigo to set it up).

For people who want to go beyond the basics, the ActiveHome Pro, from X10 Corporation ($49; macworld.com/0626), can also work with wireless modules and security sensors. It's frequently sold bundled with some X10 modules, which can save you money.

Software OS X users are lucky to have two flexible and well-supported home-automation applications: XTension, from Sand Hill Engineering ($149; www.shed.com), has a long history on OS 9 and gives you powerful and flexible scripting options; Indigo, from Perceptive Automation ($90; macworld.com/0627), conforms to the Aqua interface standard and lets you set up common automations without programming. Both work with Tiger, and both are available in free demo versions.



Setting Up Your Schedule To fool thieves, have Indigo turn on your lights at a different time each night: when you set up a new action, use the program's Randomize By field to set general parameters.

How to Do It

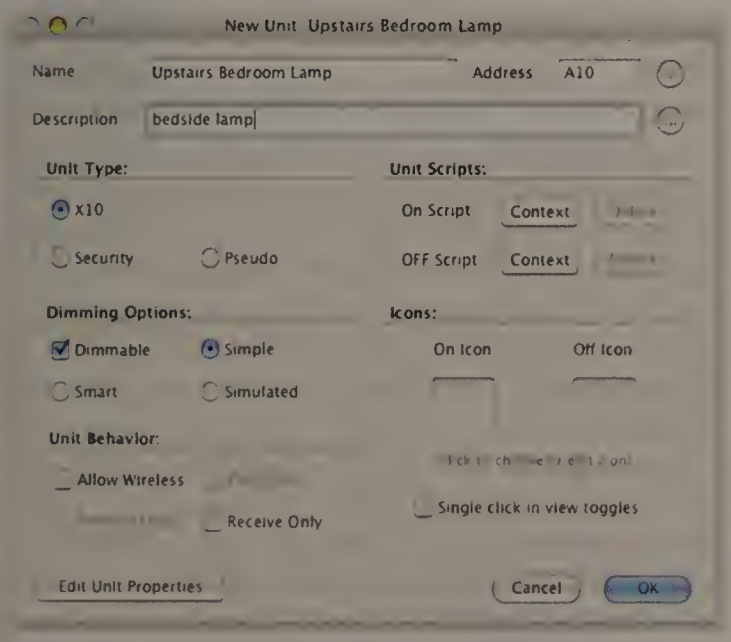
Probably the most common home-automation scenario for beginners is using a Mac to turn on lights, so it appears from the outside that someone is home. Unlike mechanical timers, the Mac doesn't have to turn lights on at the same time every evening. (You can make the system activate at sunset as the seasons change.)

Let's assume that you're using two X10 lamp modules, one connected to a lamp in an upstairs bedroom, and one in the downstairs family room. Their X10 addresses are A10 and B5, respectively. You've connected your PowerLinc USB or ActiveHome Pro controller to a Mac, plugged the controller into a nearby electrical outlet so it can send and receive X10 commands, and configured either XTension or Indigo to use the controller you've selected.

Using XTension First, tell XTension about your lamps. Choose New Unit from the File menu. In the dialog box that appears, give the unit a name and a description. In the Address field, enter `A10`. Under Unit Type, select X10; under Dimming Options, select Dimmable. Repeat this process to add the lamp in the family room, but use `B5` as the address. Click on OK to finish.

Then create a group that includes both of the lamps you added. Choose New Group from the File menu, give the group a name (such as Sunset Lights), and add the two lamps to the group by dragging them from XTension's master unit list. Click on OK.

You'll need to create a scheduled event that turns on the group shortly after sunset. Choose New Event from the File menu. Enter a name for the event, and choose Turn On from the Action drop-down menu. In the All Units pop-up menu, choose the Sunset Lights group. Select the Repeat Every option, and then select Sunset. (XTension uses your system settings to determine your local sunset time.) Finally, select Randomize option and enter a number, such as *15*. This will cause the event to occur anywhere from 1 to 15 minutes before or after sunset, so the schedule is less predictable.



XTend Your Network Telling XTension about your lamps is easy: You give each one a name and unique X10 address and then tell the software about its capabilities.

After you click on OK, you'll see the new event in the Scheduled Events window, along with the randomized time that was selected for the next execution. As long as your Mac is on and XTension is running, your lights will come on at the scheduled time.

Using Indigo Select New Device from the File menu. As with XTension, give the lamp a name and a description. Then select Lamp Module from the Type menu, and tell Indigo its address. When you're done, click on OK and repeat for the second lamp.

Next, set up an action group that will turn both of your lamps on. Choose New Action Group from the File menu. Name the action Sunset Lights; then click on the New button to add the first action. In the Edit Action window that appears, select Send Device Action from the Type menu, choose Turn On under Action, and select your bedroom lamp from the Device list. Repeat these steps to add a second action that turns on the family-room lamp. Click on OK to finish.

Now set up an event that triggers your action group at sunset. Select New Time/Date Action from the File menu. In the Time/Date Trigger section of the window that appears, click on Sunset and enter 13 in the Randomize By field. Then click on the Action tab and choose Execute Action Group from the Type pop-up menu. Choose Sunset Lights from the Group pop-up menu and click on OK.

As with XTension, as long as your Mac is on and Indigo is running, your lamps should turn on at the scheduled time. ☐

GORDON MEYER (www.gordonmeyer.com) is the author of *Smart Home Hacks* (O'Reilly Media, 2004).

Old Files, New Mac

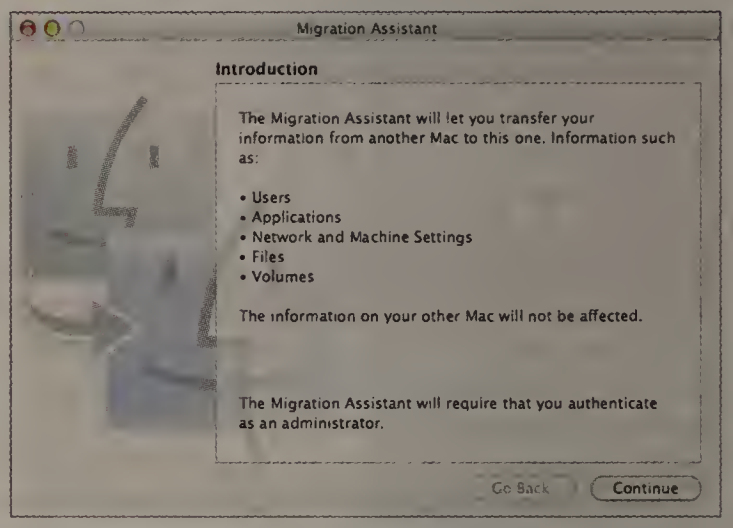
You finally did it—you got a new Mac to replace your aging one. Congratulations! But before you sell your old machine on eBay, you need to take care of business. The older Mac contains a whole bunch of data that you'd like to keep. So how do you transfer it from the old Mac to the new? The answer depends on how much of the contents you want and how much time you'd like to spend.

Use Apple's Migration Assistant

For starters, you can use the software that Apple provides for these transfer tasks. Originally called Setup Assistant, Migration Assistant is included on all Macs that shipped with Mac OS X 10.3.4 or later. It launches by default the first time you start the new machine. However, you can launch it again at any time; it's located in the /Applications/Utilities folder.

This easy-to-use utility walks you through transferring your files, including the necessary step of using Target Disk Mode to mount the older computer's hard drive on your new machine. You decide how much data to move. You don't erase the contents of your new drive. Instead, Migration Assistant selectively deletes files on your new computer and replaces them with the transferred versions.

You can choose to transfer just your Home folder, all your user accounts, or most of the files and folders at the root level of your drive (including the Library and Applications folders, but not the System folder).



Personal Assistance Apple's Migration Assistant provides an easy way to move files from an old Mac to a new one. It walks you through the process from start to finish.

Migration Assistant copies only files newer than the ones already on your drive. So you don't have to worry about accidentally replacing iMovie HD with an older version, for example. It also offers an option for transferring existing networking and sharing settings, so you don't have to re-create them.

Be aware that if you use Migration Assistant after you've created an account on your new Mac, and transfer over an account that has the same name, the utility will disable the new account and move it to the /Users/Deleted Users folder.

The Upside Migration Assistant is the most user-friendly way to transfer a lot of data from one Mac to another. It replaces files selectively, so you don't erase your new drive—and the new version of the OS that's on it—in the process of bringing over old data. There's also little chance of unintentionally deleting critical files.

The Downside Many settings don't transfer to the new Mac, including those for printers, iSync, Bluetooth, Energy Saver, Software Update, and your .Mac iDisk. Of course, re-creating these settings is usually not a big deal. In most cases, you can boot from your old Mac to see what they were.

You may have problems getting Migration Assistant to work if the *firmware* on your older Mac isn't

Hit the Target

It's easiest to transfer files using Target Disk Mode, which makes your old Mac act like an external hard drive. Here's how to proceed:

1. If your old Mac is running a pre-Tiger version of OS X, restart it. When you hear the startup chime, hold down the T key. A FireWire icon will dance across the screen; this means that the Mac is in Target Disk Mode. If the old Mac is running Tiger, go to the Startup Disk preference pane and select Startup Disk. Click on Target Disk Mode. In the window that appears, click on Restart. The Mac will start up in Target Disk Mode.

2. Connect your Target Disk Mode Mac to your new Mac via a FireWire cable. After a brief delay, the old Mac will mount on the new Mac as if it were an external hard drive. (You'll see an icon for it on your desktop.)

Migration Assistant Mojo If you're using Migration Assistant, you don't need to worry about these steps—just follow the on-screen instructions. If you've already gotten rid of your old Mac but were wise enough to clone its hard drive, Migration Assistant will be able to transfer data from the clone. After you mount the external hard drive where the clone is located, click on the Continue button. Migration Assistant will simply proceed to the next step without asking you to restart your Mac.

up-to-date. Firmware is machine-specific software on the Mac's logic board. You can modify it *only* with a firmware updater. To make your firmware current, download and run your Mac model's latest updater from Apple's Web site (macworld.com/0562). (If your firmware is already current, the updater will tell you so.)

Clone Your Old Mac

In this scenario, you erase and replace the contents of your new Mac's hard drive. You *can't* do this simply by copying files via the Finder. For one thing, doing so won't copy OS X's essential invisible files. For another, it won't correctly transfer file permissions. The upshot? Your Mac won't start.

The solution is to use backup software designed for this task. The easiest-to-use and most feature-packed programs don't come from Apple. Instead, choose a third-party alternative, such as Shirt Pocket's $20 SuperDuper (●●●●½; macworld.com/0660) or Bombich Software's free Carbon Copy Cloner (●●●●½; macworld.com/0563 [at press time, it had not been updated for Tiger]). Use one of these utilities to clone an exact copy of your old drive onto the new. After you're done, either program can serve as a general backup utility.

You can also use Disk Utility (/Applications/Utilities) to clone the older Mac's hard drive, although some people report problems booting from the destination volume after a transfer. Mount your old computer on the new one's desktop using Target Disk Mode (see "Hit the Target"), launch Disk Utility, and select your old Mac in the column on the left. Click on the Restore tab. From the list of mounted drives, drag the old Mac's startup volume to the Source field and the new Mac's startup volume to the Destination field. Select the Erase Destination option and click on Restore.

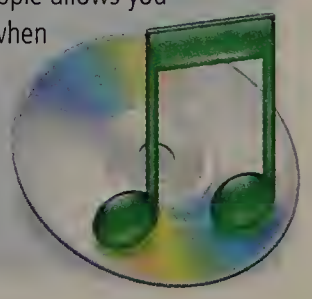
The Upside When you clone a drive, you can be 100 percent certain that every single file on your old Mac has made it onto your new one. And if all goes well, permissions and passwords will work as before. Your new machine will be exactly the same as your old one, just faster and better. This is especially reassuring if you're a power user who has customized or added files in the Library folder, or the Library folder within the System folder.

The Downside Success depends on the quality of the software you use and whether you follow the directions correctly. Make a mistake or trip over a bug in the software, and you could wind up with a drive that doesn't boot or a bunch of lost data.

Also, this method works best if your old and new Macs are running the same version of OS X, and if you don't have any essential computer-specific files that the transfer would erase. If your old Mac is running Panther and your new Mac is running Tiger, don't clone your old Mac without upgrading it first.

Remember Your Tunes

If you buy music from the iTunes Music Store, remember that Apple allows you to play it on only five computers. To avoid annoying problems when you're trying to get purchased songs to play on your new Mac, make sure to deauthorize your old computer in iTunes (Advanced: Deauthorize Computer). You'll need to have Internet access for this. iTunes will ask you to authorize the new computer the first time you try to play a protected song.



And this method will erase any of your new Mac's bonus software, such as the latest version of Apple's iLife and your trusty Nanosaur 2. You can reinstall these items, but this is another hassle.

Transfer Select Files by Hand

Your final option is to transfer just essential documents and applications, using the Finder. Start up your new Mac and create a user account. Connect the two computers via Target Disk Mode. Then transfer the files you want from your old Home directory. Transfer more-current applications, or apps you don't have on your new Mac, from your old Applications folder.

I recommend that you also transfer the Library folder that's in your old Home folder. Don't use it to replace the new one—store it separately. You can retrieve and transfer files, such as your Safari bookmarks file, from that location later. (It's the Bookmarks.plist file located in */your user folder/* Library/Safari.)

The Upside There's almost no chance that you'll unintentionally transfer or delete something this way, because you maintain complete control. You don't change any system software, so you'll also have the least likelihood of encountering problems when you restart your new Mac.

The Downside You have to decide exactly what to transfer, and this method doesn't automatically transfer any settings, so you'll have to reset everything yourself (or transfer the files that store the settings). More than with the other methods, you'll find that you have to reinstall various applications, especially those that require a serial number for installation.

Moving Up, Moving On

If you're deciding whether to get a new Mac, don't let the prospect of transferring your data hold you back. Apple's Migration Assistant makes moving easier than ever before. And with any of the methods described here, you can reliably and quickly transfer all the stuff you want to save. □

Contributing Editor TED LANDAU is the author of the forthcoming *Mac OS X Help Line, Tiger Edition* (Peachpit Press). He also writes monthly columns for MacFixIt (www.macfixit.com) and the Mac Observer (www.macobserver.com).

10 AppleScripts for iTunes

AppleScripting is a powerful way to automate repetitive (and often tedious) tasks on the Mac. Once you start using a good script, you'll wonder how you ever lived without it. The good news is that you don't have to know how to write scripts in order to take advantage of them. There are tons of AppleScripts on the Web (most of them free downloads), and quite a few of them are for iTunes.

playlist

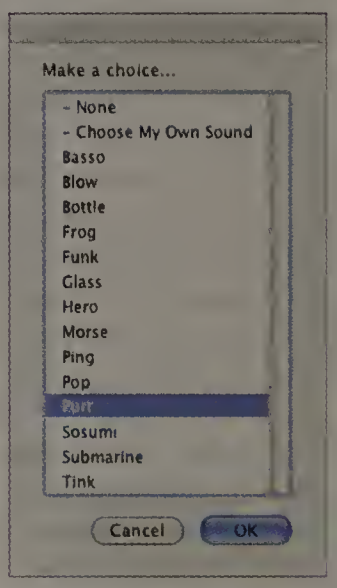
Want more tips on digital music? For iPod- and iTunes-related expert advice and breaking news, as well as reviews of all the latest gadgets, check out playlistmag.com.

If you're an iTunes user who hasn't yet jumped on the AppleScript train, now's a great time to climb aboard. To start you off, I asked Doug Adams—who runs the Web site Doug's AppleScripts for iTunes (www.dougscripts.com/itunes)—to offer his top picks from the more than 300 scripts on his site. All the scripts listed here have been certified to work with the latest version of iTunes in Tiger (OS X 10.4). (You can download a zip archive of all the scripts described here from macworld.com/0588, or visit Doug's site to download these and other scripts.)

Once you download a script, you'll need to install it to make it work in iTunes. Quit iTunes if it's running, and drop your script in */your user folder/* Library/iTunes/Scripts. If this is your first foray into iTunes scripts, you'll need to create a Scripts folder (or just download the set and drop the resulting Scripts folder in the right place). Then relaunch iTunes, and you'll find that you can access your scripts by clicking on the script icon in the menu bar (between the Window and Help items).

1. I Hate That iTunes Done Chime!

If you're sick of the standard Done chime that iTunes plays after importing files (or after running some of the import or convert scripts described later in this article), you're in luck. This applet lets you choose one of OS X's built-in sounds, select any AIFF file on your Mac, or turn off the chime altogether (see "Sound Off"). To launch it, you double-click on it instead of selecting it via the Script menu.



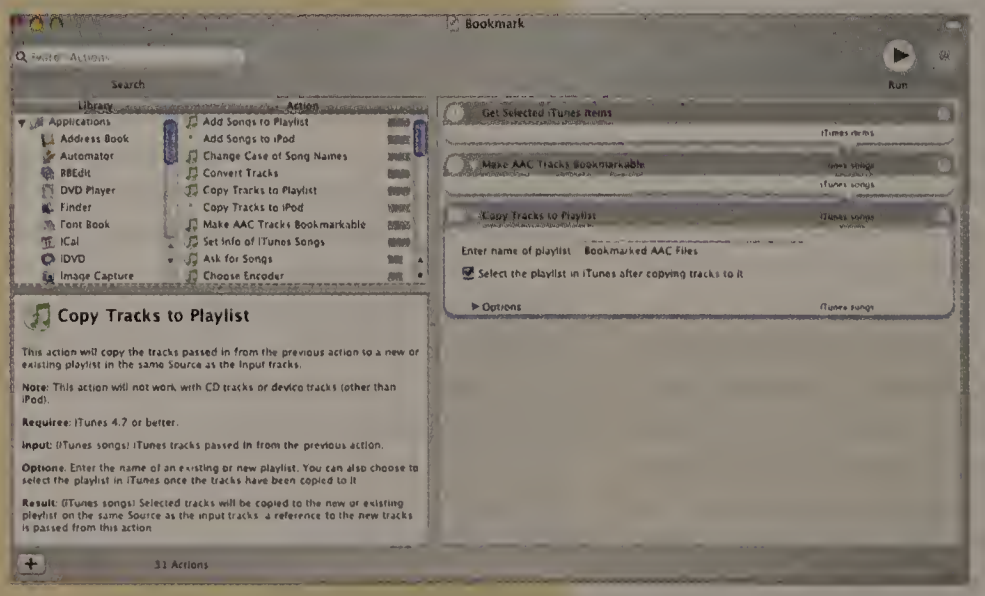
Sound Off Change—or disable—the chime that iTunes sounds when it finishes encoding.

2. Find Album Artwork with Google

When you buy a music track from the iTunes Music Store, the file contains embedded album art. But for any music you've ripped from your own CD collection, you'll have to add cover art yourself. This script uses a selected track's album and song title to search (via Google's Images page) for artwork. You can then manually drag the artwork to a song or group of songs in iTunes to add it.

Get In On the Actions

AppleScript is great, but not everyone wants to spend time learning how to write scripts. And thanks to Tiger, now you don't have to. OS X 10.4 introduces Automator—scripting for the rest of us. Unlike AppleScript, Automator allows anyone to put together a workflow by dragging and dropping a series of actions into a window, instead of having to learn complex programming commands (see "Easy Automation"). Apple includes a bunch of Automator actions for iTunes and the iPod, and Doug Adams has put together a series of seven actions—Get Selected Tracks or Selected Playlist, Choose Encoder, Restore Encoder, Convert Tracks, Copy Tracks to Playlist, Copy Tracks to iPod, and Make AAC Tracks Bookmarkable—that you can download from macworld.com/0589 and start using.



Easy Automation With Automator, you can create workflows for apps such as iTunes—no programming skills required.

continues

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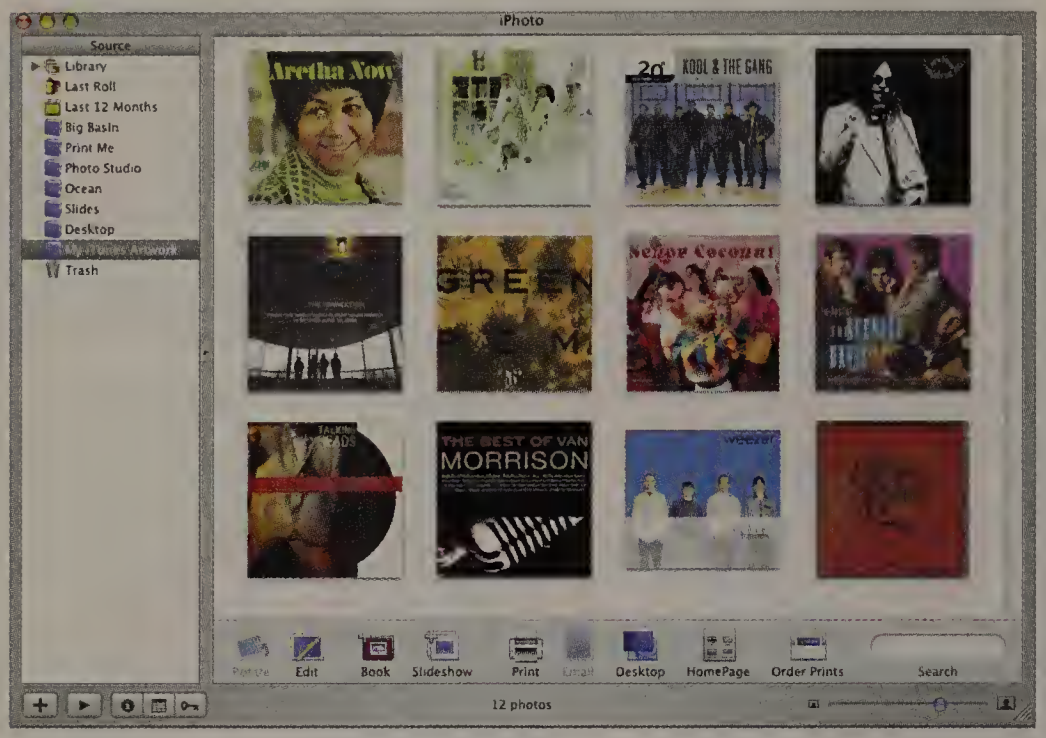


Cover Me Easily send album art to a special album in iPhoto 5.

3. Export Artwork to iPhoto

If you'd like to keep a collection of your tracks' cover art handy, this script will export the artwork of the selected tracks or a selected playlist to a new album in iPhoto 5 called My iTunes Artwork (see "Cover Me").

4. Make Bookmarkable

Audiobooks are bookmarkable—that is, they remember where you stopped playing them; when you return, they pick up at the same spot. If you'd like similar functionality with other files, this script makes any AAC track bookmarkable by changing its file type to M4B. Bookmarking can be particularly useful for long songs, captured streams, or Podcasts (as long as they're AAC files).

5. Tracks without Artwork to Playlist

Want to add artwork to your tracks but don't know which ones are missing art? This script scans any selected tracks, playlist, or library, and adds items that don't have artwork to a new playlist named No Art. You can then add the artwork manually (the Find Album Artwork with Google script can help here).

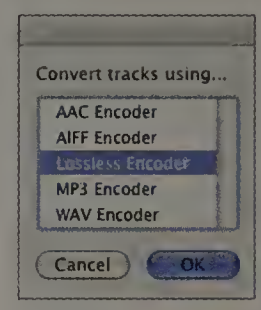
6. Google Lyric Search

Did the Beatles really sing "A girl with colitis goes by" in "Lucy in the Sky with Diamonds"? Find out with this simple script, which searches for song lyrics by submitting the name and artist of the selected or currently playing track (along with the word *lyric*) to Google, using your default browser.

7. This Tag, That Tag Scripts

With convenient online databases, you no longer have to enter tag information by hand every time you rip a new CD. But the information you get on the Web isn't always right, and sometimes tags get switched or you want to tweak something. These four scripts help you swap and copy data between, and append and prepend data to, tags in iTunes.

8. Quick Convert



Take Your Pick Temporarily change iTunes' encoder without altering its preferences.

Say you have iTunes set to rip songs as AAC files, but you occasionally want to import songs as Apple Lossless files or convert a file to AIFF. This script lets you rip songs from a CD or convert tracks in your library (to a new playlist), using your choice of available encoders, without having to open the iTunes Importing pane (see "Take Your Pick"). After iTunes finishes encoding tracks, the script restores the default encoder you've set in iTunes' preferences.

9. Rip to iPod

Don't care about keeping songs in your iTunes library—just want your music on your iPod? Then this is the script for you. Run it to rip a CD with your choice of encoder, copy the tracks to your iPod, and then delete and remove them from your iTunes library. It's the closest thing to seamless CD-to-iPod importing.

10. Import iPod Audio Files

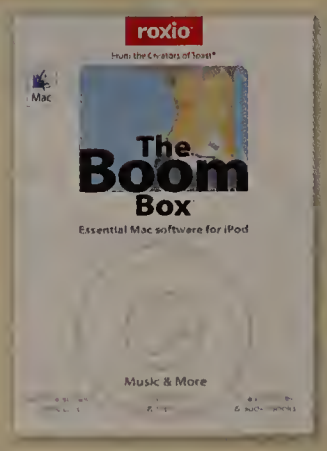
Need to copy tracks from your iPod to your PowerBook's iTunes Library? This script adds songs to your Music folder just as if you were ripping them from CDs locally, and it will even create a new playlist for your imported songs if you want. The included ProgBar application (which also goes in the Scripts folder) shows the download status. (Note that you'll need to have your iPod in the manual-update mode to use this script.)

JONATHAN SEFF is *Macworld*'s senior news editor—and a firm believer in the power of AppleScript.

ICON BY PAUL HOWALT

CHECK IT OUT

Sonic Boom



Roxio (www.roxio.com)—maker of the CD- and DVD-burning applications Toast and Popcorn—has just introduced **The Boom Box**, a collection of five previously released sound utilities to use with iTunes and the iPod. The $50 suite includes Audio Hijack, iPodder X, iSpeak It, MusicMagic Mixer, and Roxio's own CD Spin Doctor.

Rouge Amoeba's Audio Hijack lets users grab audio from nearly any application on a Mac, including streaming audio from RealPlayer and Windows Media Player. Thunderstone Media's iPodder X is a utility that lets you browse, subscribe to, and download Podcasts (features now in iTunes 4.9, too). ZappTek's iSpeak It converts text files into spoken-word audio files that you can listen to on-the-go. Predixis's MusicMagic Mixer analyzes the sound wave of each audio file and lets you build intelligent playlists for iTunes. And CD Spin Doctor (previously included only with Roxio's Toast) lets you digitize audio from vinyl, cassette, and other analog audio sources—and it includes noise filtering and automatic track creation.—PETER COHEN

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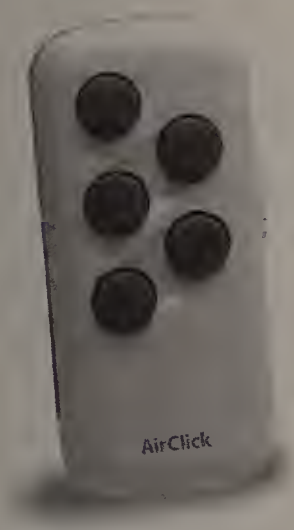

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Solve Printer Problems

Blurry details. Runny ink. Unsightly blotches. Getting the best prints from your ink-jet printer can be tricky. Most printers will warn you when ink levels are low, but other problems are tougher to pinpoint. Whether your prints suffer from pixelation or puddling, I'll show you how to recognize and correct the most-common print problems.

Mechanical Problems

A clogged or misaligned print head won't print at its best. Since mechanical details vary from printer to printer, you should consult your printer's manual for specific information about solving print-head problems with your model. But here's what to look for:

Prints are lighter than expected; prints contain white spots or horizontal lines. These signs point to a clogged print head—especially if you haven't used your printer for some time. Clean the head by running the printer's utility program. If you can't find it, try accessing it from Printer Setup Utility (/Applications/Utilities). Select your printer from the list, and choose Configure Printer from the Printers menu.

You may need to clean the head several times for best results. Be sure to print a test sheet between cleanings to avoid damaging the nozzles.

If the cleaning routine doesn't work, try leaving your printer turned off overnight. The next day, run the cleaning process again. The dried ink will soften, making it easier for the printer to clean.

If you have a chronic problem with clogged heads, make a habit of turning your printer off at night. (Turn it off at the printer, not at the power strip.) In some models, doing so will engage a capping mechanism that protects the nozzles.

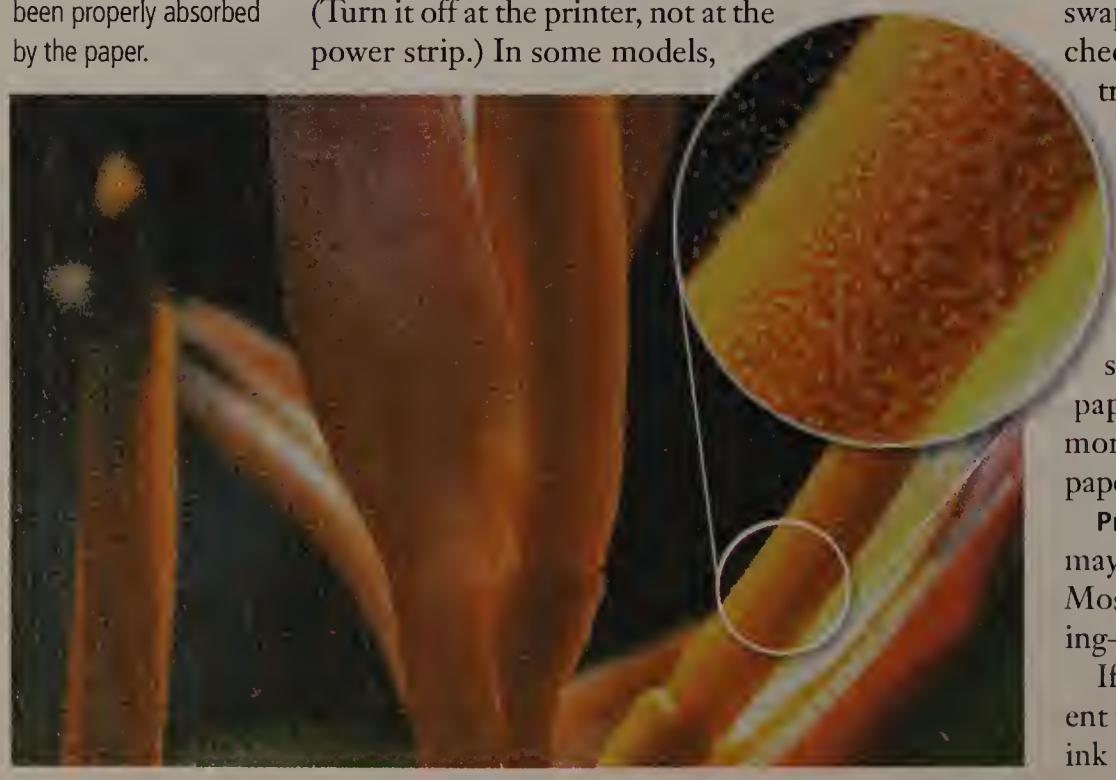
Most printer utilities will let you print a test sheet that uses all the printer's ink cartridges. If you haven't printed a color image in a while, print a test sheet before printing a large file—it wastes less ink than a bad print.

Vertical lines are jagged. This is usually a sign that the print head is out of alignment. There's not much you can do to avoid this problem—all print heads become misaligned over time. Your printer utility should include an option for correcting the problem.

Colors are missing; prints lack shadows and contrast. Colors may print inconsistently even before your printer instructs you to replace a cartridge. If the cartridges are low on ink when the problem occurs, try replacing them; this may improve color quality.

If there's enough ink but your print seems to be missing a particular color, you probably have a clogged nozzle, so you'll need to clean your print head. If your print lacks shadows and contrast, the black ink cartridge is the likely culprit.

Color quality can also suffer if ink cartridges have been in the printer for more than six months. Try swapping in a new cartridge. If your image looks psychedelic, make sure you haven't loaded an ink cartridge in the wrong color slot.



Right Print, Wrong Paper This print suffers from puddling—tiny pools of ink haven't been properly absorbed by the paper.

Paper Problems

Your printer isn't always at fault. The wrong paper or the wrong printer-driver settings can also cause a bad print. You'll usually get the best results—and encounter fewer problems—if you stick with your printer manufacturer's inks and papers. But if you're trying to be creative or save money by trying alternative media or third-party papers, the following tips should help.

Prints are blurry. Your paper may be damp, or you may have loaded it with the wrong side facing up. Most papers have only one side designed for printing—usually the brighter or shinier side.

If you loaded the paper correctly, try using a different paper setting. Your printer may be using too much ink for the selected paper. (Uncoated papers absorb

more ink than coated, or glossy, papers.) In the printer driver, switch to a lower-quality setting, or turn off options that use more ink—the Super MicroWeave setting in some Epson printers, for example.

Pictures are grainy. If you've already cleaned and aligned your print head and your images still look as though they have old-fashioned film grain rather than smooth gradations, try switching to a higher-quality print setting. If that doesn't solve the problem, the culprit may be a low-quality paper. Try printing on a sheet of the manufacturer's recommended paper, and see whether the image quality improves.

Software Problems

Print dialog boxes offer a confusing array of settings, and it's easy to overlook a check box or a drop-down menu that affects your output.

Prints have tiny puddles of ink; the ink is runny or patchy. Occasionally, your images may look as if they've been printed on very fine sandpaper (see "Right Print, Wrong Paper"). Referred to as *puddling*, this problem often occurs when you select the wrong paper settings in the Print dialog box or use a paper that isn't designed for your printer. It's particularly common with glossy paper.

To address the problem, open the Print dialog box, switch to the print settings, and verify that you've chosen the correct paper stock from the list. Many third-party papers include a tip sheet with recommended printer settings.

Your prints have bands of heavy ink. Banding is often the result of printing at too high a printer resolution—especially when you're printing on uncoated paper or art papers. This causes the printer to use too much ink. Most printers don't let you select a specific resolution. Instead, try a lower print-quality setting.

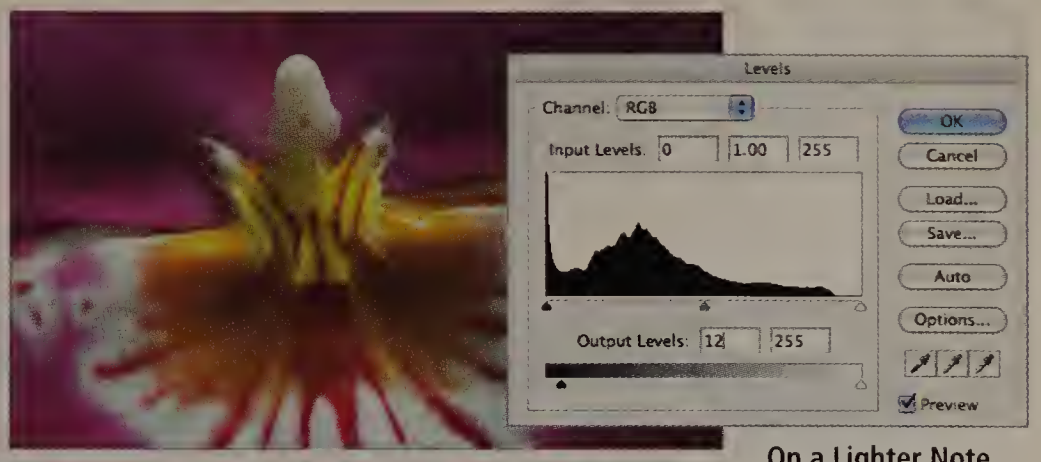
Black-and-white images have a color tint or appear coarse. Although it may seem counterintuitive, color should be turned on when you print black-and-white images. This will give you smoother gradations and richer tones than printing with only black ink.

Many printers have difficulty producing neutral gray-scale images. If you notice a subtle tint when your photos come out of the printer, wait until the print has had time to dry before making any adjustments (try leaving it overnight). The colors may shift while drying and become more neutral.

If you still see a tint in your image once it's fully dry, you may be able to adjust the color balance from your printer's color-management settings (in the Print dialog box). You'll need to experiment, so when you find settings that work for you, be sure to save them as a printer preset.

Images are darker or lighter than expected; shadows lack details. Your first line of defense should be to calibrate your monitor (go to macworld.com/0687 for instructions). If your images are still coming out darker or lighter than they look on screen, make sure the gamma setting (which controls the brightness of on-screen images) in your printer driver matches the one you used to calibrate your monitor. (In some drivers, this setting is listed under the Color Management section in the Print dialog box.) Macs traditionally use a gamma setting of 1.8, but some people prefer to use 2.2, which has become the industry standard outside the Mac world.

Because of the way papers absorb ink, dark shades of gray may appear as solid black when printed. As a result, images with heavy areas of shadows lose detail and appear too dark. For example, I've noticed that my iPhoto books print a bit darker than they look on screen. You can compensate for this tendency by lightening the shadows in an image editor before you print. In Adobe Photoshop Elements 3, open the Levels dialog box by selecting Enhance: Adjust Lighting: Levels (or pressing ⌘-L). Drag the black arrow under the Output Levels scale slightly to the right to lighten the shadow areas of your image (see "On a Lighter Note"). You may need to experiment to determine the right amount of adjustment. □



On a Lighter Note
If your prints look too dark, the paper may be absorbing too much ink. You can tone down shadows by moving the black Output Levels slider in Photoshop Elements' Levels dialog box.

ROBERT ELLIS is a freelance writer, a Mac fanatic, and an avid digital photographer. He publishes a blog at www.futurosity.com.

Understanding Resolution

Improperly set resolution can lead to a host of problems, including banding, blurry or pixelated photos, or long wait times when printing. To add to the confusion, printer resolution and image resolution are two different things.

Printers measure resolution in dpi, the number of dots they lay down per square inch of paper. Depending on the printer, resolution can be as high as 4,800 by 2,400 dpi. (Printers reach these resolutions by layering dots on top of one another as they print.) Higher dpi settings mean longer print times and more ink used, but they may not translate into a higher-quality print. Most printers don't let you set printer resolution directly, but selecting a higher print-quality setting probably means you're printing at a higher resolution.

By contrast, image resolution is measured in ppi, or pixels per inch. If you have too few pixels per inch, your image will appear soft or the pixels themselves will become apparent—producing jagged lines and blocky details. But there's no benefit to having *too many* pixels per inch; that can choke your printer and won't give you a better print. The ideal image resolution varies from printer to printer, but the range is between 150 and 360 ppi. In Adobe Photoshop and Photoshop Elements, you adjust resolution from the Image: Image Size and Image: Resize menus, respectively.

This Old HomePage

You've got a .Mac membership and you've posted loads of pictures and witty iMovie parodies to your .Mac HomePage site. But as the page count mounts, it becomes clear that there's no quick, easy way for visitors to find what they're looking for. It's time to organize that sock drawer otherwise known as your .Mac site and bring order to the chaos.

Building a .Mac HomePage is simple, but organizing a HomePage site can be more difficult than you might think. (If you've built a Web site from scratch before, you've probably found Apple's tools to be particularly confusing.) But don't give up. You might not need to buy a program such as Macromedia's $79 Contribute (♦♦♦♦; macworld.com/0598) and upload the site to your iDisk's Sites folder. In this article, I'll focus on what's possible with .Mac's built-in tools.

Organize Your Assets

Your first step is to evaluate what you've already uploaded to your site. I'll use the example of a basic site structure that divides content into three sections: Pictures, Movies, and Private Files (for your resume and other items you'd like to password-protect).

Create Sites Go to homepage.mac.com and log in with your .Mac member name and password. You'll see a table that lists all the individual pages you've uploaded so far. To start, create sections (which .Mac refers to as *sites*) called Pictures, Movies, and Private Files. These will essentially be empty folders until you put pages into them.

Click on the arrow next to the message "Add another site; Separate your pages into groups." You'll be taken to the Create A Site page.

In the Site Name field, type `Pictures` and then click on the Create Site button. (Don't worry about the Password Protection option; we'll get to that later.) You'll be taken back to the HomePage site-building page, and you'll see a new column labeled Sites next to the one for Pages. At the top of the Sites column are a folder labeled with your .Mac member name in bold and a folder labeled Pictures.

To create the Movies and Private Files sections, click on Add under the Sites column. The Create A Site page will appear, and you can follow the same steps as before. When you create the Private Files section, password-protect it by selecting the Password Protection option that appears under the Site Name field. Type in the password you want to use.

Put Everything in Place With your sections created, organize your pages. In the Sites column, select your .Mac name. To the right, you'll see all your pages.

When you select an item in the Pages column, an indicator to the right describes what type of page it is (iMovie for movie pages, and so on). Select and drag Photo Album pages to the Sites column and drop them on the Pictures folder. Now drag iMovie pages to the Movies folder, and drag your resume page to the Private Files folder. You can click and drag a page's name to change its order in the list.

Create Your Home Page

At this point, you've created sections to organize your pages, but there's still no way to go from one section to another. It's time to make your home page.

Site Menu Savvy To create the home page, you'll build what .Mac calls a *site menu* page. A site menu lets you create links between your sections. Since .Mac normally generates links automatically, this is one of the only ways you can manually control them (short of cracking open your pages and typing in HTML).

In the Sites column, select your .Mac name and then click on the Add button beneath the Pages column. In the page that appears, you'll see a row of tabs to the left. Select Site Menu, and then pick a theme for the page, such as Brushed Metal, Modern, or Western. (The themes have different layouts.)

Now fill in the blanks. You can add a title for the site at the top. You'll see one link box with blank fields and a number of tools. (For more details about these tools, see "Nice and Neat.")

Add a Picture To make a section link, type its name in the Page Title field, and (if you like) a brief description in the field below that. Click on the Choose button to add a picture. When you do so, a page where you can select an image from your iDisk appears.

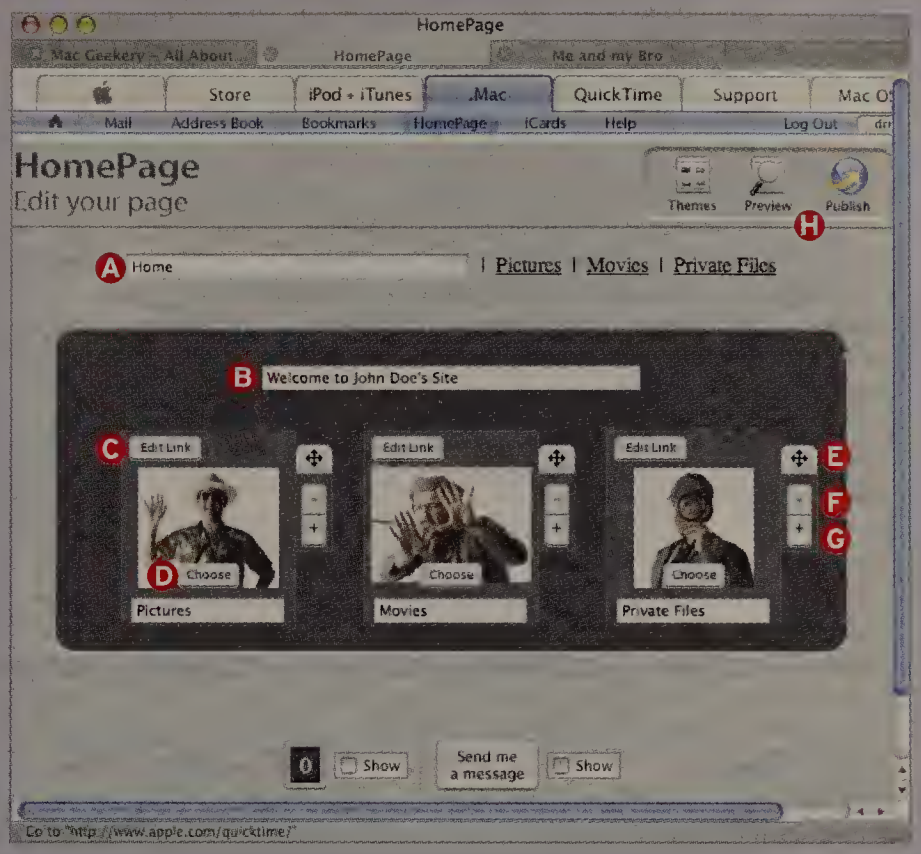
Add More Sections Go through this same process to make links to the other sections of your site. Click

GO TO WEB:

Ever been to a Web site and wondered, "How'd they get that little graphic next to the URL, and how can I do that for my site?" That graphic is called a *favicon* (short for *favorite icon*). If you're willing to wade into some raw HTML code, you can add one to your .Mac pages, too. Go to macworld.com/0616 to learn how.

Nice and Neat

Create a site menu to help visitors navigate your Web site's sections. Here, I've created a home page for a site with three sections: Pictures, Movies, and Private Files.



A Enter the page's link name here. If you want to change the *order* of these links, you must do so from the main site-building page. Drag the page you want to the top of the Pages column—the first page in the list will appear first here.

B Type in the page's title here.

C Click on Edit Link to create a link. Here, I link to the Pictures *site menu* instead of the Pictures site. That way, visitors can choose which photo-album page they want to see before taking the time to download one.

D Click on Choose to add an image from your iDisk.

E Click and drag this pointer to reorder your link boxes.

F Click on the minus sign (–) to delete this link box.

G Click on the plus sign (+) to add a new link box.

H When you're finished, click on Preview to check your work and on Publish to post the page to the Web.

on the plus sign (+) to add a new box to the page. For effect, try adding a blank link box (don't forget to remove the *Page Title* text from that text field) to your site menu page and using it as filler space between link boxes. If you want to get rid of a link box, click on the minus sign (–). If you want to change the order of your link boxes, click and drag the button that looks like points on a compass.

Add Live Links Once everything is in place, click on an item's Edit Link button to determine where visitors will go when they select this item. Click on the My Pages tab to select one of any of your .Mac pages or sections. Click on Other Pages to create a link to an external site, or click on Email to create a link to your e-mail address.

Consider Your Choices If one of your Web-site categories—Movies, for example—has few pages, you might choose to link from your home page directly to the Movies section. When people click on the link, they'll go to the first page in your Movies folder and see links to all the other movie pages at the top.

However, consider creating a site menu for the section instead. That way, visitors can quickly choose what they want. This is particularly helpful if your files are big. For example, if the Movies link takes visitors straight to a movie page, that movie automatically starts loading and playing. If visitors don't want to see that one, you've wasted their time.

Help Visitors Get Home Where you put your site menus makes a big difference in your site navigation, too. Your first option is to click on your .Mac member name and click on the Add button under the Pages column to create category site menus that live in the *top* level of your site. When you do this, links to all the sections will appear at the top of each of your section site menus. The trade-off? Now the photo and movie pages themselves won't link back to the section site menu.

Alternatively, you can add site menus to their matching site folders (putting the Pictures site menu in the Pictures folder, for example). The top of each photo page will sport a link back to the Pictures site menu. However, the Pictures site menu won't have any links to the other sections (Movies, Private Files, and Home). You'll have to add link boxes to the site menu manually. Whatever you choose, when you've finished, click on Publish to save your changes.

Troubleshoot Your Home Page

With everything in place, make sure that visitors will see what you intend. When you look at the Sites column on your HomePage site-building page, your .Mac member name should be in bold. If it isn't, select your .Mac member name in the Sites column and click on Edit. In the page that appears, enable the Mark This My Start Site option and click on Apply Changes. Now click on your .Mac account name and look at the Pages column to see what *page* appears in bold. Whatever is in bold in this view is what will appear when someone visits your .Mac HomePage (homepage.mac.com/*membername*).

If your home page isn't in bold at the top of the list (or if you'd like another page to be your visitors' starting point), grab the correct page and drag it to the top of the Pages column. When you let go of the mouse, the pages will change order and the first one will appear in bold.

A Tidy Site Is a Happy Site

You've tidied up your .Mac HomePage, and now there's only one last thing to do: let everyone know. The compliments should soon start pouring in. ☐

CHUCK TOPOREK is a senior editor for O'Reilly Media and the author of *Inside .Mac* (O'Reilly, 2004) and *Mac OS X Tiger Pocket Guide* (O'Reilly, 2005).

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Laptop ER

A carafe of water is accidentally dumped onto your PowerBook by a flight attendant, zapping it instantly. Or the airplane seat in front of you abruptly reclines, crushing your laptop's screen.

Those are just two of the indignities that can befall your laptop when you travel. (The first actually happened to mine; the second, to that of my wife's seatmate on a recent flight.) No matter how well you care for your PowerBook or iBook, laptops are all too vulnerable to slipping, dropping, skidding, and otherwise impacting terra firma in all sorts of undesirable ways.

So if something bad happens to your portable when you're on the road (or even at home), what's the next step? Can you fix it yourself? Or will you need to send the machine back to Apple for repair? And is the damage covered by AppleCare? While I'd certainly never wish any of these disasters on anyone, here's what to do if one of them strikes.

Drinks Are on You

According to laptop-repair specialists, spilled liquid is one of the most common calamities to befall laptops.

If water is the culprit, shut down the machine as soon as possible and let it dry out thoroughly, preferably for 24 hours or more. Sugary or alcoholic beverages are worse: the sugar crystallizes as the liquid dries, forming electrical pathways where none should exist and increasing the risk that running the laptop will fry some components. If your laptop has an unpleasant encounter with an appletini, shut the machine down immediately and take it to the nearest repair shop.

Sudden Impact

Another common laptop mishap is the gravity-accelerated impact event—that is, dropping the thing. Whether it slipped from your hands, slid out of an open bag, or was yanked off of its work surface when someone tripped over a cable, the results can range from cosmetic scuffs to a destroyed hard disk. The big, beautiful screens on today's laptops are particularly vulnerable; the impact from even relatively short falls can crack the screen or damage the cabling connecting it to the main body.

If your laptop should fall, take a deep breath and wait for the initial panicked rush of adrenaline to pass. Then pick up your laptop (and any pieces), turn it on (if it wasn't on to start with), and assess the damage.

First, find out whether the machine works at all. Does it turn on? Does it start but stop sometime during the boot sequence?

Second, if it does rev up, listen to the hard drive. Is it making any unexpected clicks or grinding noises? If so, shut down immediately and don't reboot. The shock from the drop may have damaged a component in the drive, such as the read-write mechanism, in which case restarting the computer could irrevocably destroy your data. Fortunately, PowerBooks introduced last January include a Sudden Motion Sensor, which locks the drive

continues

Care for AppleCare?

Although I'm not a fan of extended warranties, I think all laptop buyers should invest in an AppleCare plan ($249 for an iBook, $349 for a PowerBook; www.apple.com/support/products/).

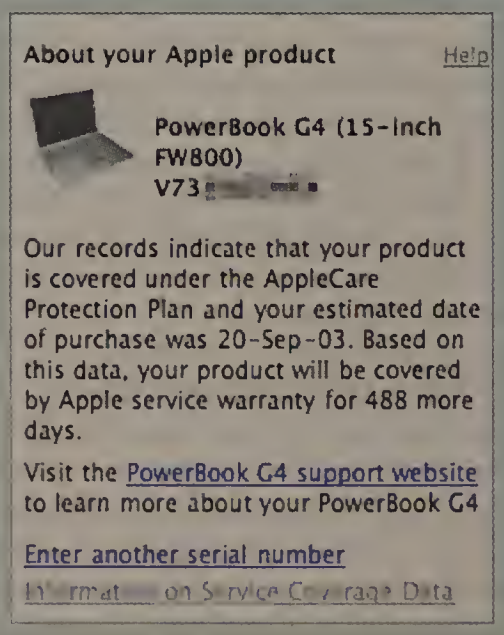
Laptops include smaller, more-delicate parts—nearly every Apple laptop I've owned has gone into the shop at some point for warranty-covered repairs. Unlike desktop machines, which usually stay in one place, a laptop travels with you, so it has innumerable opportunities to be damaged by accident or by simple wear and tear.

But AppleCare primarily covers defects in manufacturing or workmanship, such as hard drives that fail (under normal use) or dead FireWire ports. It specifically excludes accidental damage—or, to be exact, "damage to the Covered Equipment caused by accident, abuse, neglect, misuse (including faulty installation, repair, or maintenance by anyone other than Apple or an Apple Authorized Service Provider), unauthorized modification, extreme environment (including extreme temperature or humidity), extreme physical or electrical stress or interference, fluctuation or surges of electrical power, lightning, static electricity, fire, acts of God, or other external causes."

AppleCare is also limited to hardware: your data is your own responsibility, which is why you should maintain a functioning backup system, especially if you travel often. (Note that if your laptop gets toasted, Apple Geniuses and authorized service providers offer data-recovery services.)

Not sure whether your Mac (or other Apple hardware) is still covered by an AppleCare plan? Go to Apple's support Web site (www.apple.com/support/) and enter your machine's serial number to see when it was purchased, whether it's still covered by AppleCare, and how many days of coverage are left if it is (see "Is It Safe?").

Is It Safe? To check your Mac's AppleCare coverage, enter its serial number at Apple's support site.



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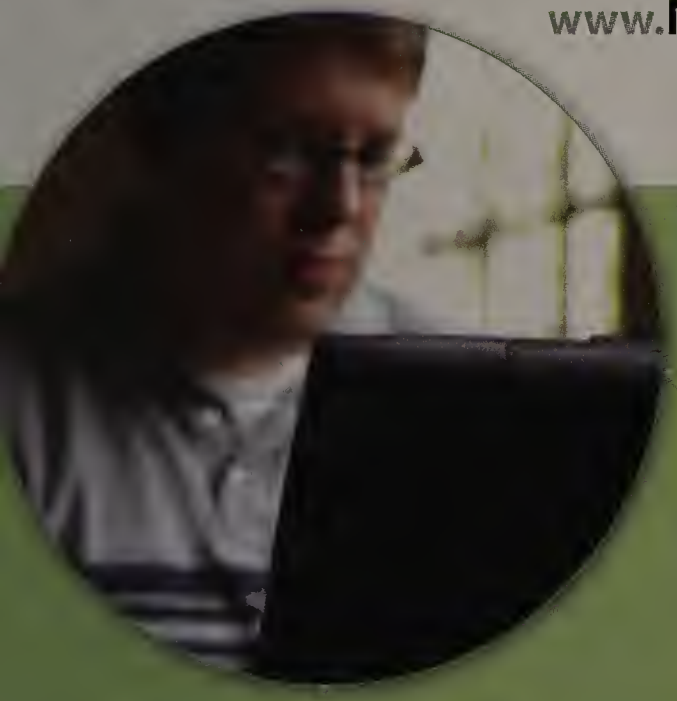

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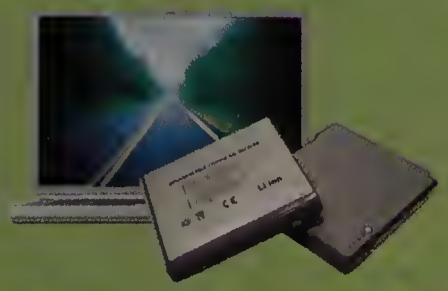

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CHECK IT OUT

Hot Mods

When Steve Jobs introduced the Mac mini at last January's Macworld Conference & Expo, most people thought, "Gee, that'd be easy to fit in the office." But a few thought, "Gee, that'd go great in my car." Because the Mac mini fits into a standard car stereo's head unit, it has inspired a cult of car-computer modders. We highlighted some of the first mini-fied rides in our May issue (macworld.com/0673). But clever DIYers have kept at it. Mike Fielder, of Houston, Texas, for example, did the logical thing and fit a Mac mini into his Mini Cooper (top; macworld.com/0674). Fielder's Mini Cooper sports a 7-inch screen attached to a hinge so he can still access the standard stereo and radio. But the ultimate mini mod comes from Mark Turner, of Atlanta (center; macworld.com/0676). He not only added auxiliary ports and a universal media-card reader to the panel between the front seats, but also managed to put a brushed-metal power button in the dashboard of the car, just above the glove box (bottom). For more mini mods, check out MacVroom (www.macvroom.com).—CYRUS FARIVAR

heads when it detects rapid movement, thus making this type of damage less likely to occur.

Lastly, look at the screen. Is it cracked or broken? Assuming you can get some kind of on-screen image, is it disrupted by horizontal or vertical lines? Are any of the pixels dark?

While diagnosing the damage yourself is doable—a cracked screen is pretty obvious—misdiagnosis is easy, too. For example, what may appear to be a bad screen could turn out to be a faulty connecting cable. That's why it may be better just to go directly to a repair center, if only to have a technician tell you what's wrong.

Fix It Yourself

Some repairs—replacing RAM, an AirPort card, or the hard drive on some models—you can make yourself. That said, while replacing a hard drive is relatively straightforward with most PowerBooks, it's almost absurdly difficult in iBooks, requiring the disassembly of large sections of the machine. It's also possible to replace a screen yourself—but I, for one, wouldn't feel comfortable trying.

Deciding whether to fix your laptop yourself depends on whether you're OK with waving a screwdriver around miniaturized electronics. Apple's party line is that users can install only RAM and AirPort cards in laptops, and that messing with anything else will void your warranty.

If you're enterprising enough to try other fixes, you can buy many components—including screens and logic boards—from vendors such as PBParts.com and PowerBook Medic.com. The latter sells a line of $10 Take Apart Repair Manuals that will walk you through the process of disassembling and replacing everything from a modem to an LCD. Both vendors will also sell you most of the tools—such as Torx screwdrivers—you'll need. Depending on the part, buying it yourself could save you a few hundred dollars compared with buying from a shop or from Apple.

Leave It to the Pros

If, on the other hand, you feel less than adventurous about doing Mac surgery, you'll need to take your injured machine to an expert—either your nearest Apple Store or an independent, Apple-authorized service provider.

According to Kevin Trivett, the manager of The Mac Store in Seattle, replacing a broken screen costs about $1,400, while logic-board replacements and other internal repairs average $300 to $500. If the problem is covered under AppleCare, the laptop will probably be sent off to Apple to be fixed (see "Care for AppleCare?"). Because AppleCare's terms are pretty specific about the kinds of accident-caused damage the extended warranty will cover, you could still be looking at a bill for whatever fixes are required.

One way to potentially save some money is to purchase the necessary parts elsewhere and bring them to a repair specialist for installation. But be warned: while some stores will do such work for you, they won't guarantee the part. The Mac Store, by contrast, covers any parts that it supplies and installs on out-of-warranty machines for 90 days.

Recovery

It's important to remember that if the unspeakable happens to your beloved portable, you have some options. I hope you'll never have to put this advice to the test. But at least now you know where to turn if your PowerBook or iBook decides that it wants to try to fly.

JEFF CARLSON is the managing editor of TidBits and the author of *iMovie HD and iDVD 5 for Mac OS X: Visual QuickStart Guide* (Peachpit Press, 2005).

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Tiger's Secret Tools

With more than 200 new features, Tiger is overflowing with goodies. But most people will never open some of the most interesting ones. You'll find Core Image Fun House and Quartz Composer tucked into Apple's Xcode developer suite. These programs tap Tiger's powerful graphics abilities, letting you apply live, editable effects to digital photos, and even design your own screen saver. No Adobe Photoshop required.

I'll show you how to use the Core Image Fun House and Quartz Composer tools to create a screen saver that reminds you of your annual vacation to a tropical destination, for example. All you need are four snapshots and the Mac OS X installation DVD. On the DVD, open the Xcode Tools folder and double-click on XcodeTools.mpkg to install the tools. When that's done, go to the root directory of your main hard drive and look in the Developer folder. You'll find the apps in /Developer/Applications/Graphics Tools.

Send Photos to the Fun House

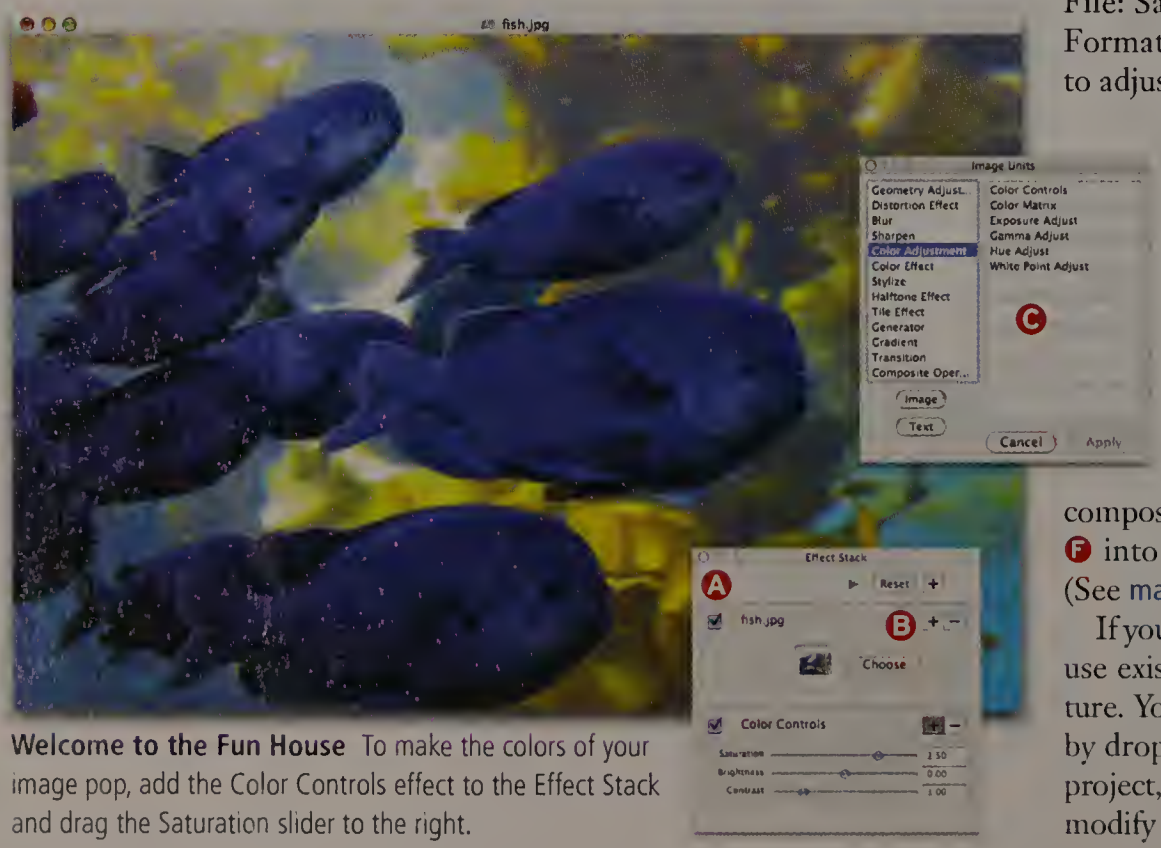
Core Image Fun House lets you quickly apply effects to your images. And since the effects are all nondestructive, you can play around without causing irreparable damage to the original image.

Step 1 Launch Fun House and select one of your vacation images in the Open dialog box (see "Welcome to the Fun House"). The Effect Stack palette Ⓐ works like Adjustment Layers in Photoshop or Photoshop Elements (if you don't see the palette, press ⌘-option-E to bring it up). From here, you can add or delete layers, make adjustments, and toggle layer visibility. But unlike most image editors, Fun House displays layers from the bottom up.

Step 2 Click on the plus sign (+) Ⓑ in the top layer. The Image Units palette will appear Ⓒ, listing your options for effects. To make your vacation pictures colorful and dreamy, select Color Adjustment from the category column on the left, select Color Controls from the column on the right, and then click on Apply. Fun House adds Color Controls to the Effects Stack palette and offers sliders for adjusting Saturation, Brightness, and Contrast. Bump up the saturation to make the colors more intense.

Step 3 Repeat step 2 to apply another effect. For example, you might apply the Bloom filter (in the Stylize category) to add a glow. If the default settings are a bit too intense and produce white halos, drag the Intensity slider to the left.

Step 4 Save the image to your desktop by selecting File: Save As and choosing JPEG File from the File Format pull-down menu. Repeat the previous steps to adjust and save three more images.

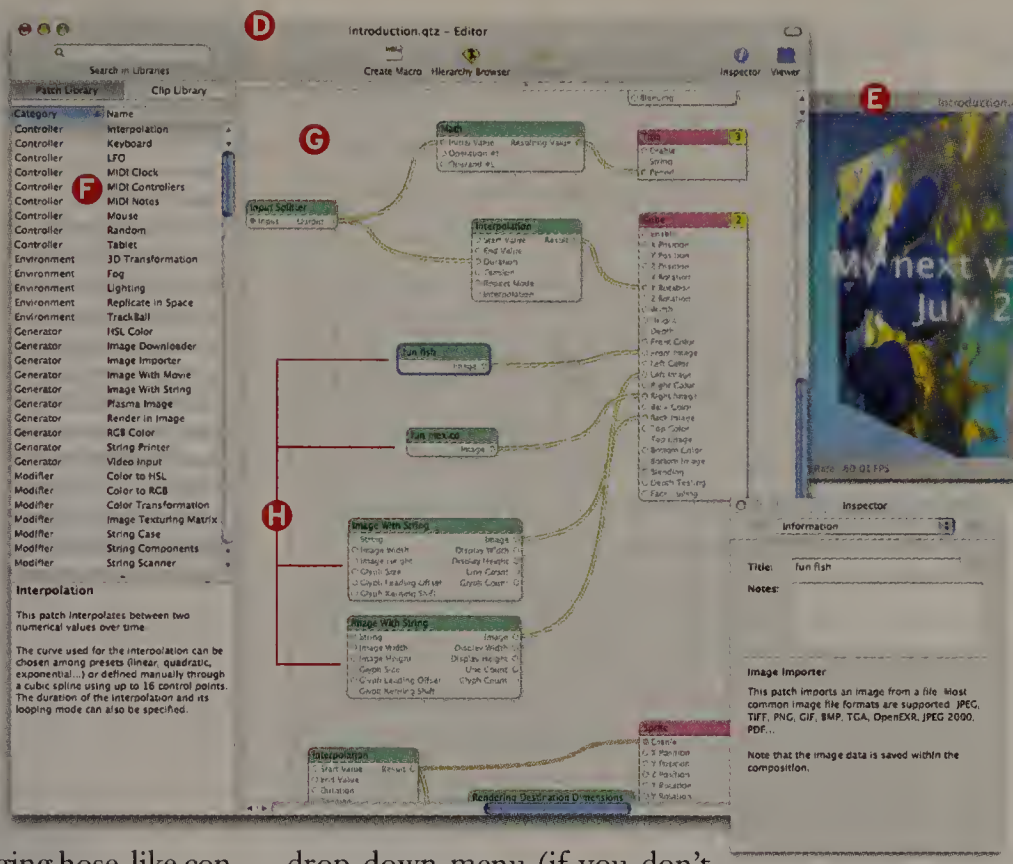


Welcome to the Fun House To make the colors of your image pop, add the Color Controls effect to the Effect Stack and drag the Saturation slider to the right.

Build a Screen Saver

To turn your images into a screen saver, you'll need to switch to Quartz Composer (see "That Personal Touch"), which consists of an Editor window Ⓓ, where you build your creations, and a Viewer window Ⓔ, which renders the current settings. To create a composition (Apple's name for Quartz Composer documents), you drag patches—composition building blocks—from the Patch Library Ⓕ into the workspace Ⓖ and string them together. (See macworld.com/0575 for more information.)

If you don't want to build compositions from scratch, use existing Quartz compositions as points of departure. You can turn any composition into a screen saver by dropping it into your Screen Saver folder. For this project, you're going to use your Fun House images to modify one that displays text on a rotating cube.



Step 1 When you launch Quartz Composer, you'll see the Quartz Composer Assistant pane, which lets you select from a handful of templates. From the Finder, navigate to the /Developer/Examples/Quartz Composer/Motion Graphics Compositions folder and double-click on the Introduction.qtz file.

Four Image With String patches (H) control the cube text. The green titles indicate that these are Processor patches, which process data and pass the results to the pink Consumer patches, which in turn render the results. You connect green and pink patches by stringing hose-like connectors between their ports (indicated by small circles on the patches). Ports pass parameters from one patch to another, telling the composition what to do.

Step 2 To replace the cube text with your images, select the topmost Image With String patch by clicking on it. Notice that its Image port connects to the Front Image port of the Cube patch. Since you don't want text, press the delete key to get rid of the Image With String patch.

Step 3 Drag the image you created in Fun House from the desktop into the workspace. An Image importer patch appears with the title of the image you selected. For an explanation of what the patch does, click on it and select Information from the Inspector's drop-down menu (if you don't see the Inspector, go to Editor: Show Inspector, or press ⌘-I).

Step 4 Reconnect the two patches by clicking on the Image port in your new patch and dragging your mouse to the Front Image port in the Cube patch. The image will now appear on the front of the cube. If you don't see it, wait for the cube to rotate around.

Step 5 Repeat the above steps to delete the other three Image With String patches and replace them with your images. Be sure to attach an image only to the Left Image, Right Image, and Back Image ports. If you attach an image to the Top Image or Bottom Image ports by mistake, you won't see them.

Step 6 Your cube looks good, but you can't see the screen saver's background text. To move it to the front, you need to change the rendering order (indicated by the yellow number) in the top right corner of the Title patch. Control-click on the pink Title patch and select Rendering Layer: Layer 3.

Look closely at the Title patch and you'll notice that its corners are square, whereas the others' are slightly rounded. This indicates that it's a *macro patch* (a patch that contains other patches). To change the text, you'll need to access its subpatches. Double-click on the Title patch to display the subpatches in their own workspace. Find the topmost Billboard patch and double-click on its Color port. In the Colors palette, choose a color and click on Done. To return to the main workspace, select Edit Parent from the Editor menu or press ⌘-U.

To change the text to something else, double-click on the String port in the Title patch. Edit the text and press return.

Step 7 Save your composition by selecting File: Save As. Navigate to */your user folder*/Library/Screen Savers and save the file. Go to the Screen Saver tab of the Desktop & Screen Saver preference pane, select the file from the list, and click on the Test button. □

That Personal Touch

To add your images to the screen saver, delete the Image With String patches, drag your images into the workspace, and connect them to the input ports on the Cube patch. With a few changes, this stock Quartz composition becomes a custom screen saver that'll remind you of pleasures to come.

Buried Treasure

Core Image Fun House and Quartz Composer aren't the only tools secreted away inside Tiger's /Developer/Applications folder. Here's a sampling of what else you'll find:

> Audiophiles can experiment with **AU Lab**, a digital mixing application.

> The **FileMerge** utility compares files or directories and allows you to merge them. It's a handy way to find out whether your desktop Mac and your PowerBook are in sync.

> Designers might enjoy **IconComposer**, which lets you use just about any image to make your own icons.

> Apple's secret magnifying glass, **Pixie**, lets you magnify a portion of the screen up to 1,200 percent and then save it as an image.

> If you're interested in Apple's Text-To-Speech, check out **Repeat After Me**, which lets you play with the pitch and duration of phonemes, the building blocks of speech.

> And don't miss the **Sample Widgets** folder (/Developer/Examples/Dashboard). You'll find a handful of quirky Dashboard widgets here, including Framing Gallery (which displays a picture) and Voices (which speaks any text you type in the widget).

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HELP DESK

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Mac OS X Hints

The Insiders' Tips You Won't Get from Apple

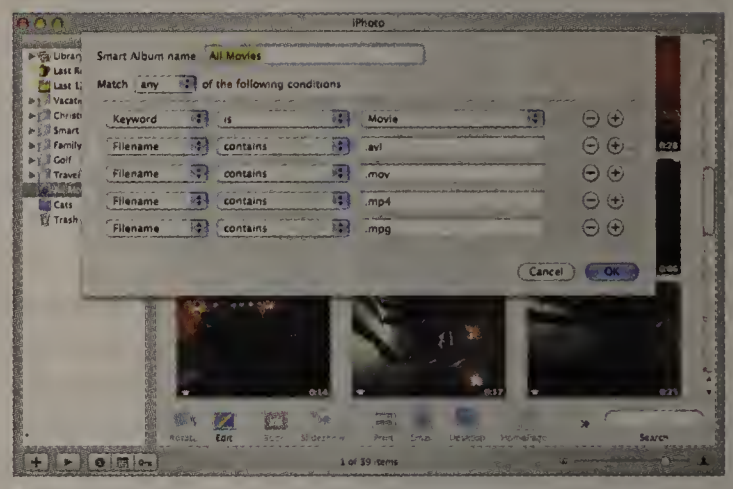
Light Up Your Desktop

The Desktop tab of the Desktop & Screen Saver preference pane contains a Solid Colors option—just in case you're sick of the gorgeous full-color images and patterns Apple provides. At first glance, it looks as though you have 10 colors to pick from, but there are actually 11: if you click to the right of what appears to be the last color (Solid Mint), you'll set your desktop to solid white.

Why might you want a white desktop? It's possible that you just like white, of course, or maybe you want a neutral background behind a screenshot. But one interesting use of this setting is as an additional light source for an iSight. If you've ever tried conducting a video chat in a dimly lit room, you've probably noticed that your face takes on a blue cast (from the standard Aqua background). Set the desktop to all white, though, and you'll not only add light to the room but also prevent yourself from turning blue in the face.

Group Movies with iPhoto Smart Albums

Apple's iPhoto (part of the iLife '05 suite, $79; www.apple.com) isn't just for photos anymore—it can also store most movie clips. Given the program's organizational strengths, this is a great way to keep track of those 30-second snippets you record with your digital camera. Here are a couple of ways to use iPhoto 5's skills to organize your clips further.



Movie Magic Using this special smart album, you can easily collect all your movie clips in iPhoto 5—clips marked with the Movie keyword *and* unmarked clips.

First, iPhoto automatically attaches the keyword Movie to imported movie clips. That makes it easy to use a smart album to find movies. Just select File: New Smart Album, or press ⌘-option-N. Give the album a name, and set the three pop-up menus to read Keyword Is Movie. Click on OK when you're done, and you'll have a new smart album that contains all marked movies.

But what if you've been playing around with keywords and you've unmarked some imported movies? In that case, you can modify the smart album to find movies by their file type as well. Control-click on the smart album and select Edit Smart Album from the contextual menu. In the sheet that appears, click on the plus sign (+) next to the first rule. Create a new rule and set the conditions to Filename Contains .avi (including the dot). Click on the plus sign again and create new versions of this rule, changing just the file-name portion each time—add a rule for files ending in *.mov*, *.mp4*, and *.mpg*. You need each file to match only one of these conditions, so go to the Match pop-up menu at the top of the sheet and select the Any option. Click on OK (see "Movie Magic"). This revised rule will find *all* the movies in your iPhoto database.

Quickly Size iPhoto Thumbnails

If you're an iPhoto 5 user, three keyboard shortcuts can save time and make iPhoto more responsive. In Edit mode, press 0, 1, or 2 to change the zoom level

CHECK IT OUT

Extend Safari's History

Safari's History menu lets you easily revisit sites you've seen recently. The key word here is *recently*—by default, Safari stores the last 100 sites visited within the last seven days. But if you'd like to keep a longer history, you can. With Terminal, it's easy. Quit Safari and launch Terminal (/Applications/Utilities). Type this command: `defaults write com.apple.Safari WebKitHistoryItemLimit 9999`.

Press return. Then type this command and press return: `defaults write com.apple.Safari WebKitHistoryAgeInDaysLimit 365`.

The first line tells Safari to remember 9,999 items; the second tells it to remember things for up to a year. That's it. Now you'll find that your history file just keeps growing and growing and growing.

One caveat is that large history files can really slow Safari down. To set a different time period, just change the `365` in the second line to a smaller number of days you'd like to record in your history, and reduce the number of items to a level that suits your browsing habits. For instance, 30 sites a day for 90 days would be 2,700 entries.

Sunshine Stickies If you have a bit of time and an image-editing program, you can free yourself from pastel-hued Stickies notes.

of your image—0 zooms the image to the largest size that will fit in the window, 1 makes one pixel on your screen equal to one pixel in your image, and 2 makes two pixels on your screen equal to one pixel in your image (a 2× zoom, in other words).

You can also use these shortcuts in normal Browse mode, though the keys have different effects. Pressing the 0 key produces very small thumbnails. Pressing the 1 key sets each image's thumbnail size to fill the available space. Pressing the 2 key displays thumbnails at their native resolutions (240 pixels in either height or width). This last shortcut offers a huge speed boost; when iPhoto displays thumbnails at their native resolutions, it doesn't have to waste time scaling them, so thumbnails appear very quickly.

Change the Stickies Widget's Colors

Tiger's Dashboard application lets you instantly access a number of useful utilities (Apple calls them widgets), including weather, stock charts, iCal events, and more. One of the included widgets is Stickies, a Dashboard version of the longtime Mac application.

While the widget is great, you may tire of its pastel tones (accessed by clicking on the small letter *i* in the lower right corner of the note). Luckily, they're quite easy to change, although you'll lose some of the stock colors when you add your own. To do so, you'll need an image-editing program, such as Lemke Software's GraphicConverter or Adobe Photoshop, that supports PNG images.

In the Finder, navigate to the top-level /Library/Widgets folder. Control-click on the Stickies widget and choose Show Package Contents from the contextual menu. In the new window that opens, navigate into the Images folder. Here you'll find each of the colors used in the Stickies widget.

You'll need to decide which color you don't mind losing. If you want to change the default Stickies color, use the yellow.png file; otherwise, choose a color that you don't use very often. Once you've decided on a color, drag and drop it onto the desktop to create a copy. (Leave the Finder window open; you'll use it again shortly.) Duplicate the file on your desktop by pressing ⌘-D, and keep the duplicate copy in a safe location. You'll need this backup if you ever decide to revert to the original color.

Next, open the original image in your image-editing program. Here you can do basically anything you want—add gradients and text, for instance (see "Sunshine Stickies"). Once you're done editing, save the file back to the desktop, using the same name as the original and applying the PNG format.

Switch back to the Finder. Drag and drop your modified file into the still-open Images folder. When you do so, the Finder will tell you that you can't move the item because you can't modify the Images folder. Click on Authenticate. When asked, choose to replace the original file. Enter your password when prompted.

And that's it. Reactivate Dashboard by pressing F12. Click on the plus sign (+) in the corner of the screen to bring up the Dashboard bar. Drag the Stickies widget off the bar to create a new Stickies instance. Click on the *i* button to turn the Stickies note over,

continues

ICONS BY PAUL HOWALT

UNIX TIP OF THE MONTH

Make Terminal Output More Humane

There are three very handy Unix commands for looking at the stuff on your drive. If you delve into Terminal (/Applications/Utilities) at all, you're probably familiar with `ls`, which lists the contents of a folder. But you may not be aware of `df`, which reports on total disk-space utilization, and `du`, which shows disk usage at the folder level.

Though each of these tools is useful in its own right, they don't necessarily present the output in the most user-friendly format. Consider the `du` command. If you run `du /usr/local`, the output will include something like this:

```
25056 ./php/bin
80    ./php/doc/libiconv
80    ./php/doc
```

The first number shows the size of each folder, stated in the arcane measurement system of file system block usage. While that may be useful for the ultrageek, it doesn't give you a real sense of folder size.

Enter the `-h` option. This flag, which you can add to `du`, `df`, and `ls`, is the *human-readable* flag. For example, if you changed the previous example to `du -h /usr/local`, you'd get output that included the following:

```
12M   ./php/bin
40K   ./php/doc/libiconv
40K   ./php/doc
```

It's now much clearer that the bin folder takes up 12M, or 12MB, of your hard drive. The abbreviations you're likely to see, in addition to `M` (for megabytes), are `K` (kilobytes), `B` (bytes), and `G` (gigabytes).

As you play with the human-readable option, you'll probably find that `ls -lh` is a much more useful version of `ls -l` (the `-l` in both commands gets you long output, which includes file-size information). If you'd like to make it easier to use the command often, create a new *alias* for it. This sets up a shortcut that types the modified command for you. To do this, put a .bash_profile file in your Home folder by typing `pico ~/.bash_profile`. (If the file already exists, this command will just edit it.) Then add this line: `alias lsh="ls -lh"`.

When you're done, press control-X, and then press Y to indicate that you want to save the changes. Finally, press return to save the file.

The next time you open a Terminal window, you'll be able to type just `lsh` to run the human-readable version of the command. The command `lsh ~/Documents`, for instance, will show your Documents folder in its full human-readable form.

OS X 101

Secrets of the Dock, Part 1

The Dock is OS X's command center. Although it seems to be a simple thing, it has more features than you might imagine, and it has power over things you might not expect it to. The Dock lets you know which programs are running (any application with a black triangle underneath its icon). It lets you store applications for easy launching. (Drag the application from the Finder into the left side of the Dock.) And it allows you to store folders, other objects, and—temporarily—program windows in its right pane.

Custom Dock You alter the Dock's behavior through the Dock preference pane. This is where you can control the Dock's size, magnification (whether it uses the zoom-in effect when you mouse over an icon), screen position, and bouncing-icon effect, and it's where you choose whether it remains visible at all times. You can also set some of these items by choosing Apple: Dock or by using the hidden contextual menu in the Dock itself. Just control-click anywhere near the Dock's dividing line, and you'll see a secret pop-up menu that offers the same entries as the Apple menu item.

And each icon in the Dock has a contextual menu associated with it. You can activate these menus by clicking and holding on the icon for a second. To avoid the delay, control-click on the icon, or use the right mouse button if you have a multibutton mouse. In OS X 10.3 (Panther), the standard contextual-menu options let you choose any program's open window, show the program in the Finder, hide its windows, or quit it. OS X 10.4 (Tiger) also lets you add the program to your login items—a handy time-saver.

Application-Specific Tricks Some programs may have additional useful features buried in their contextual menus. The iTunes menu, for instance, includes information on the currently playing song, and it lets you switch tracks or pause the player. This is a great way to manage your music without having to stop what you're doing. (Contextual-menu selections from the Dock don't activate the associated application.)

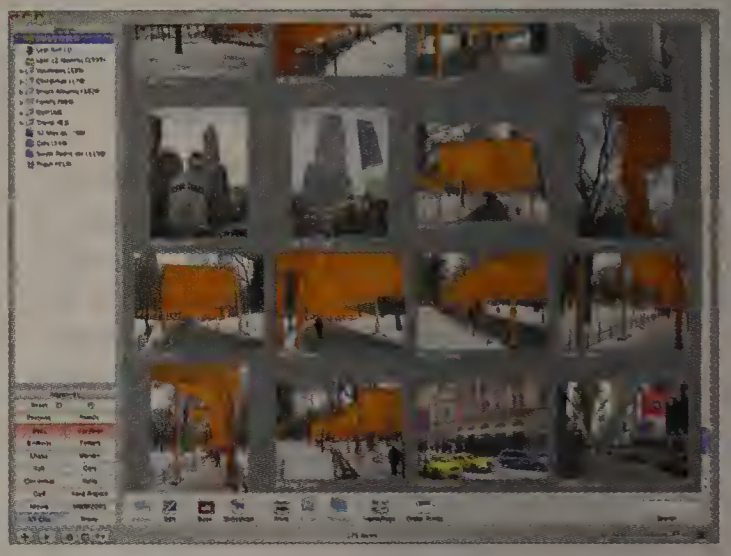
System Preferences' contextual menu lets you quickly select any preference pane, which is great when you know exactly what you want to do. Click on other programs' Dock icons to see what they have to offer (see "Pop-up Mail").

Pop-up Mail The Dock's useful options vary by application. Mail's contextual menu lets you compose a message or check for new messages.

Dock Shortcuts Want to find a docked program in the Finder without using the contextual menus? Just ⌘-click on the icon: the folder holding the program will open in a Finder window. To hide the current program's windows when switching to another program, hold down the option key before clicking on the new program's Dock icon. You can hide *all* open windows, other than the next program you'll use, by pressing ⌘-option and clicking on the icon of the program you want to switch to. To restart the Finder, hold down the option key, and then click and hold on the Finder icon. You'll see a Relaunch entry at the bottom of the pop-up menu. This is different from clicking and holding on the Finder icon and then pressing the option key: that changes the Hide option to Hide Others (the latter works for any program in the Dock, and it changes Quit to Force Quit for everything but the Finder).

Big Dock, Little Dock Sure, you can resize the Dock by dragging the vertical bar that splits the two sides. But the Dock also has a series of preferred sizes. If your computer relies on these predrawn icons, it doesn't have to spend time interpolating (or guessing) what an icon should look like, based on the nearest defined size. Using the preferred sizes makes your icons appear sharper. Hold down the option key before dragging the divider line; the Dock will resize in steps, showing only its preferred sizes.

Next month, we'll discuss the right side of the Dock and some of the great things you can do over there.



Logical Keywords Using iPhoto's ability to exclude certain keywords, you can build powerful searches. Here, I'm selecting only New York City images that don't deal with kids or vacations.

and then choose your modified color (if you changed the default yellow, you can skip this step).

You may lose your changes during system upgrades, so keep a copy of all your modified colors in a backup directory. To undo these changes, drag the original file into the Images folder and authenticate as required. Just make sure that this file has the same name as the modified color you're trying to replace.

Soup Up iPhoto 5 Keyword Searches

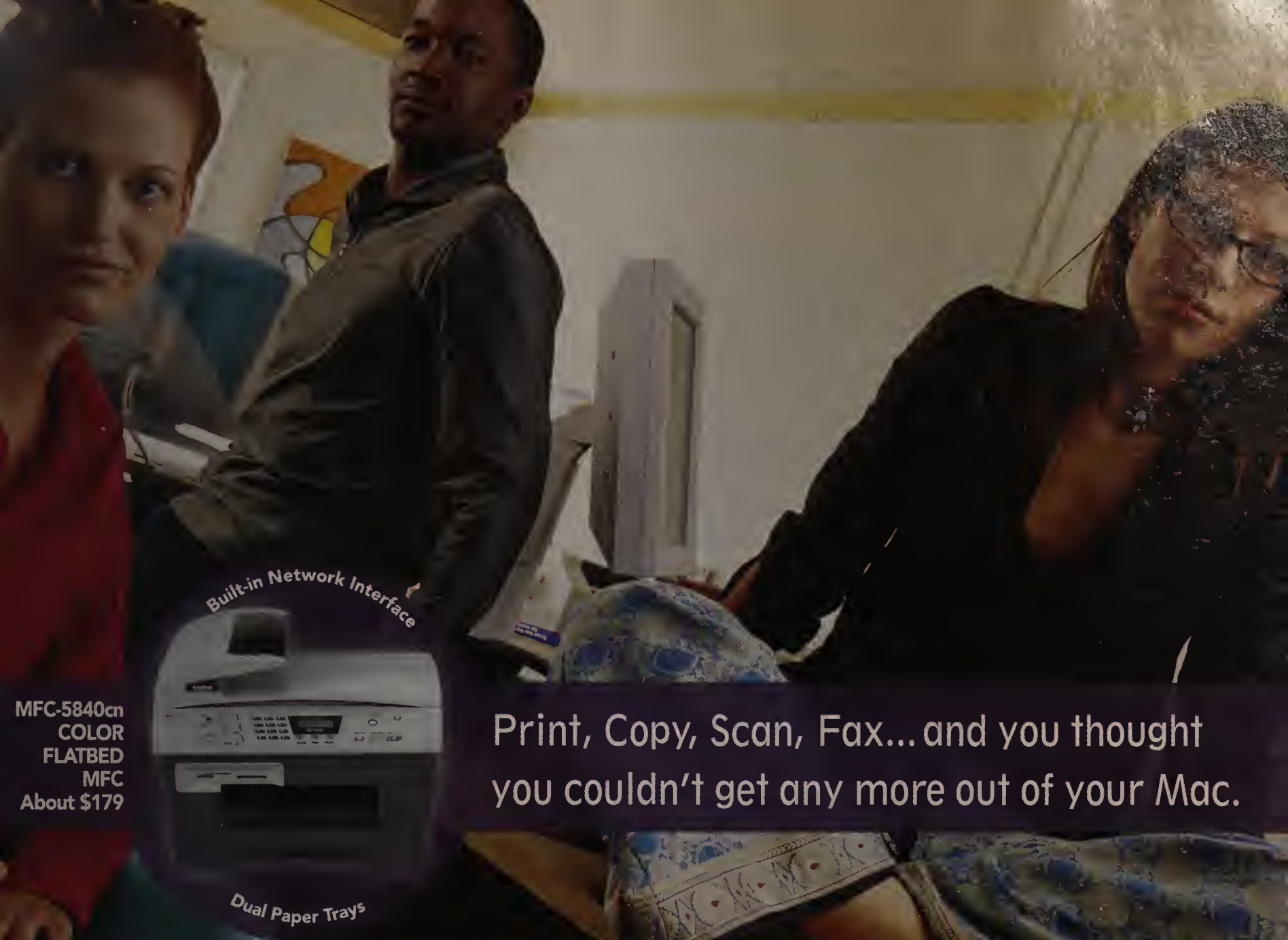
If you take a lot of photos, iPhoto's Keywords feature can make finding the right ones a lot easier. For instance, select a bunch of photos from your most recent vacation, make sure the Keywords section of iPhoto is visible (click on the small key icon), and then drag the selected photos onto the Vacation keyword. Now you'll be able to find these in a snap.

One of iPhoto 5's nicer features is that it lets you search for images using more than one keyword. Click on the keywords you'd like to include (they'll turn blue), and iPhoto will run an AND search, finding all photos that have all highlighted keywords. But what if you want to run a search that *excludes* one or more keywords? For example, you want to see pictures of Aunt Jeanne at your birthday party, but not those with Uncle Jeff hovering in the background. Here's the secret: option-click on the keyword you want to exclude. The chosen keyword(s) will now appear in red, not blue (see "Logical Keywords"). iPhoto will find images that have the chosen (blue) keywords but not the unwanted (red) keywords.

In the previous example, you'd click on the Birthday Party and Aunt Jeanne keywords, and then option-click on the Uncle Jeff keyword. Using this technique, you can quickly find the photos you'd like to see—but for maximum flexibility, assign your keywords liberally when you import new pictures. You can assign keywords by clicking on the small key icon in the main iPhoto window and then dragging images onto the keyword you'd like to assign to those pictures. □

Senior Editor ROB GRIFFITHS is the author of *Mac OS X Power Hound, Panther Edition* (O'Reilly, 2004), and runs the Mac OS X Hints Web site (www.macosxhints.com).

ICON BY PAUL HOWALT



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Mac 911

Solutions to Your Most Vexing Mac Problems

Reindex Spotlight

How can I make Spotlight start over with its indexing, or at least force it to reindex a particular volume, without reinstalling Tiger?

Steve Osborn

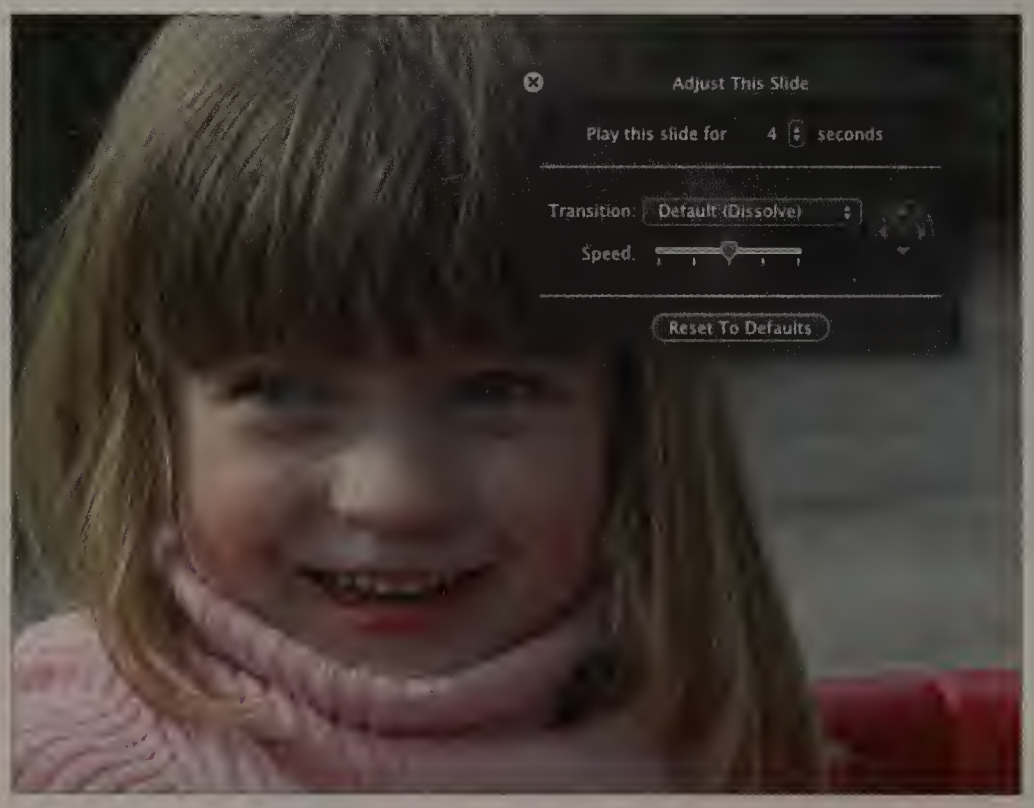
If you can't find what you're looking for when you search with Spotlight, you may want to create a new index of your hard disk. But try a couple of things first: use Disk Utility (/Applications/Utilities) to repair your file permissions, in case mucked-up permissions are the problem. (Launch the program, select the disk from the list, and click on Repair Disk Permissions.) Also, if you've recently indexed the drive, wait another day or so. Spotlight might not have finished indexing the drive even though you've been able to use it.

If your searches *still* don't work, then try this: Open the Spotlight preference pane, click on the Privacy tab, click on the plus sign (+), and add the volume you want to reindex. Wait about five minutes, select the volume in the Privacy list, and click on the minus sign (–) to remove it. Spotlight will index the volume again from the ground up.

Give Slide Shows a Voice

Is it possible to add voice annotations to photos in an iPhoto picture album and then transfer the images to DVDs?

Roland Maltais



A Minor Adjustment Adjust the timing of iPhoto 5 slides to match audio annotations.

iPhoto doesn't allow you to record audio comments and attach them to pictures. However, there are a couple of fairly laborious ways to do what you desire.

Use Prerecorded Narration The first way is to create an iPhoto 5 slide show that fits a prerecorded narration file. Begin by assembling a slide show in iPhoto. Then open iMovie or GarageBand and record an audio track that describes, in sequence, the pictures that appear in your slide show. Make a note of how long each picture's comment lasts and leave a couple of seconds of silence between each comment. Import this audio track into iTunes.

Return to iPhoto, select your slide show from the Source list, choose the first slide in the slide show, and click on the Adjust button. In the Adjust This Slide window, adjust the length of time the slide plays so that it matches the timing of the comment you recorded (see "A Minor Adjustment"). Repeat this procedure for each slide. Click on the Music button at the bottom of the iPhoto window, and in the pane that appears, choose the audio narration track you created. Select Share: Send To iDVD. Your slide show with synchronized commentary will be sent to iDVD, where you can then burn it to disc.

Use QuickTime Pro Record each comment as a separate audio file in GarageBand or an audio editor such as the free Audacity (audacity.sourceforge.net). Open one of the audio files in QuickTime Pro ($30; www.store.apple.com), and then open the image you want associated with it. Press ⌘-A to select the entire image and then ⌘-C to copy it. Click on the audio file to make it active and choose Edit: Add To Selection & Scale (this command is called Add Scaled in versions of QuickTime Player Pro prior to version 7). This makes the image display for as long as the audio file plays. Repeat this process for each slide and comment. Create a new QuickTime movie, and copy and paste each slide you created into that new movie. The last step is to drag the completed movie into iDVD and burn it.

After completing either process, pray that Apple adds a voice-annotation feature to iPhoto so you never have to do it again.

Upgrade or Trade Up?

I have a Power Mac G4 (PCI Graphics) with 320MB of RAM and a 10GB hard drive running Mac OS 8.6. I use Microsoft Office 98, Outlook Express, and a few games, and I have a dial-up connection to the Internet. I'd like to add a second

TIP OF THE MONTH

Mining for Tiger Movies

In your "Mining for Movies" tip (June 2005), you suggest that readers save streamed movies by going into the invisible tmp folder. This technique doesn't work with Tiger, so I'd like to suggest an alternative that works with Safari.

Click on a streamed-movie link within Safari (you can find such links at macworld.com/0582) and wait for the movie to launch in QuickTime Player. After the movie window opens, go to Window: Show Movie Info (⌘-I) and highlight the Source link. Copy the link, paste it into your browser's address field, and close QuickTime Player.

The movie will now load in Safari. In the browser, go to Window: Activity, locate the movie file, and option–double-click on it. This causes the movie to download to your hard drive. Close the Safari window to conserve bandwidth, but don't quit the app, as this will stop the download.

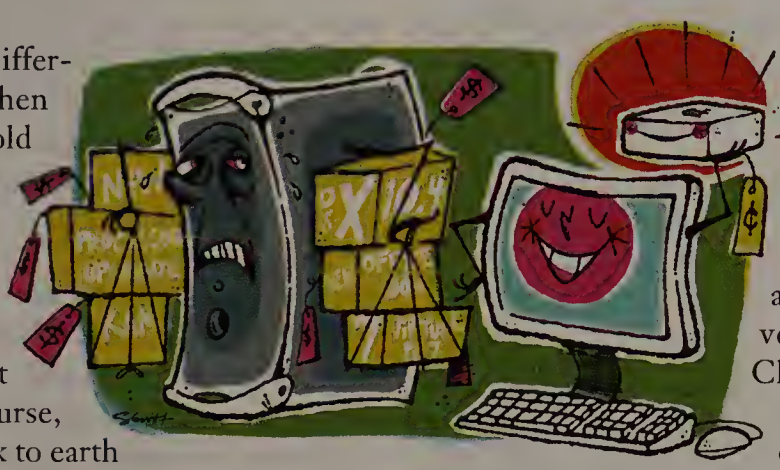
[*This technique allows you to download these movies without Apple's $29 QuickTime Pro. If you have QuickTime Pro, you can control-click on a downloaded movie within your Web browser and choose Save As QuickTime Movie from the contextual menu.—Ed.*]

Patrick Fallon

QuickTime Anytime With this trick, you can save a QuickTime movie to your hard drive even if it was designed to stream over the Internet. (How better to watch the space shuttle launch again and again?)

hard drive, install OS X, and use Virtual PC 7.0 with a current version of Windows. Will using OS X cause a noticeable drop in performance? If so, is a processor upgrade worth it, or should I look for a new Mac?

Keith Thomas



Yes, you will notice a difference in performance when you move from the old Mac operating system to OS X. When I use my Mac that's still capable of booting into OS 9, I'm astounded by how much more responsive it is in the old OS. Of course, I'm quickly brought back to earth when I recall that I can't perform simultaneous tasks in the old OS.

Setting performance aside for the moment, let's look at the *cost* of what you're proposing. At press time, a 1GHz processor upgrade from Sonnet Technologies (www.sonnettech.com) costs $400, a 120GB ATA hard drive costs about $85, OS X 10.4 (Tiger) will run you $129, and Microsoft's Virtual PC 7 (www.microsoft.com) will set you back another $129. My Calculator widget tells me you'll be putting $743 into this old Mac.

Compare that with the $499 price tag of a new 1.25GHz Mac mini, which comes with OS X installed. You already have a keyboard, a monitor, and a mouse that will work with the mini. I'd configure the mini with 512MB of RAM and upgrade to an 80GB hard drive—you'll want the extra RAM because 256MB just isn't enough to get the best performance from OS X, and a 40GB hard drive will be cramped if you play games and run Virtual PC. Apple charges $75 and $50 for these upgrades, respectively. Virtual PC will still cost you $129. So a mini, a hard drive, and Virtual PC add up to $753.

For $10 more than your proposed upgrade, you can have a brand-new computer that will offer better performance than your old, upgraded Power Mac. I'd feel a bit better if you also put a copy of Microsoft Office 2004 on this machine, but you can get along by running your version of Office in the Classic environment (you should switch your e-mail client to Apple's Mail, however, as no version of Outlook Express exists for OS X).

If it appeared that you required a more open Mac—one in which you could add PCI cards or additional internal hard drives—the decision wouldn't be so easy to make. But your needs appear to be modest enough that I'm comfortable saying, "Out with the old and in with the new!"

Bugging iMovie

In iMovie, is there any way I can put a little bug—like the ones TV stations use—in the corner of my movie?

From the Macworld.com forums

iMovie lacks an effect that lets you watermark your movie with an on-screen logo, but you can create this effect with a third-party matte plug-in. If you're the type who likes to shop à la carte, give cf/x's Picture in

continues

Send your tips to mac911@macworld.com. If we publish yours, you'll receive this dandy mug. All published submissions become the sole property of *Macworld*.

ICON BY PAUL HOWALT; MUG PHOTOGRAPH BY PETER BELANGER; ILLUSTRATION BY S. BRITT

TOOLS OF THE TRADE

Tool Time

This month I take this sidebar's title literally and discuss the tools—such as screwdrivers, wrenches, and acetylene torches—I use to muck around with my computers' insides. The right tools can make the difference between a successful upgrade and a smoldering Mac. You can purchase many of them separately from an electronic-parts shop, or look for an all-in-one computer tool kit (pictured here) made by companies such as Belkin ($15 to $78; www.belkin.com).

Grounding Strap Static electricity can kill your Mac. Before touching a computer's innards, use one of these to get grounded.

Screwdrivers The most useful ones are Phillips-head screwdrivers #000, #00, #0, #1, and #2; a small flat-head; and Torx #10 and #15.

Why you'd mess around on the inside of an iPod mini is beyond me, but if you want to remove its internal top plate, you'll need a #000 Phillips screwdriver. Today's PowerBooks have #00 screws on the bottom. The #0 and #1 Phillips screwdrivers are for small internal screws. The screw that holds a PCI card in place can be handled with a #2 screwdriver. I can't recall the last time I found a flat-head screw inside a Mac, but a flat-head screwdriver is helpful for gently prying things apart. The inside of the iMac G4 has a fair number of #10 and #15 Torx screws, as do some PowerBooks.

Needle-Nose Pliers Well tapered though my fingers may be, they're not precision instruments. These pliers are useful for grabbing tiny parts.

Three-Pronged Parts Retriever I drop small screws into my Macs all the time. This helps me fish them out.

Thin Putty Knife If you want to get into your Mac mini, use a trusty putty knife.

Credit Cards To avoid scoring your iPod case, use a thin credit card (that you're willing to damage) to separate the back from the case. A thicker credit card can be used to pry up an older PowerBook's hard drive.

IC Extractor This tool pulls up chips.

Small Flashlight Extra illumination helps when you're trying to read the tiny print on a circuit board. Get a flashlight that's small enough to hold in your mouth.

Magnifying Glass or Reading Glasses Internal connectors can be really small. Use these to get a closer look.

Digital Camera Document your progress, and when it's time to reassemble, you can see what you've done.

Pen and Paper If a photo won't do, take notes.

Clip (Static) plug-in ($1.50; macworld.com/0358) a try. It lets you place a picture saved at any size, and in just about any graphics format, into your movie. You can also distort the picture and change its transparency. The company sells a Multiple Movie plug-in ($3.50; macworld.com/0359) that lets you create video bugs, too. (Both plug-ins work with iMovie 3, 4, and HD.)

For a full-course meal that includes other useful plug-ins, try GeeThree's Matte-tastic plug-in, part of its Slick Transitions and Effects Volume Four—Hollywood Edition ($50; www.geethree.com). (This plug-in works with iMovie 2 through HD.) Like the cf/x plug-in, Matte-tastic supports a variety of graphics formats, allows you to size the bug, and lets you set its transparency. This plug-in also enables you to use not only static graphics files but also QuickTime video files. This edition of Slick Transitions and Effects includes useful effects such as VidMix, a tool for performing blue-screen tricks; Picture in Picture; Split Screen; and SlickMotion, a supercharged Ken Burns effect.

Work Wirelessly

I have a DSL connection running into my Power Mac G4 and would like to use a wireless link to an iMac about 30 feet away. Right now I've got an Ethernet cable running between the two but would like to eliminate it. What options do I have?

Art Ritchie

Probably the least-expensive option is to purchase a $79 Apple AirPort Extreme card for the iMac and a wireless router for the Power Mac. Companies such as Linksys, Netgear, and D-Link offer 802.11g wireless routers that cost between $50 and $80. Run the DSL connection into the router's WAN port, string an Ethernet cable between the Power Mac and one of the router's LAN ports (these routers usually have four such ports), and access the router's Internet connection via the AirPort card you've installed in the iMac.

Alternatively, you can add an AirPort Extreme card to each Mac. Connect the DSL modem to the Power Mac's Ethernet port, open the Sharing preference pane on the Power Mac, and click on the Internet tab. Choose Built-in Ethernet from the Share Your Connection From pop-up menu. Then enable the AirPort option in the To Computers Using list. Click on the Start button. Run over to the iMac, and you'll discover that your Power Mac appears under the AirPort menu. Choose it from the menu and start sharing its connection to the Internet.

Switch for Switchers

I am mainly a Mac user, but I need to use a PC sometimes. I don't want to take up desk space with two keyboards, so I'm looking for a KVM switch that will let me use a Mac keyboard to emulate a PC keyboard. Can you recommend one?

Robert Sena

You don't necessarily need to seek an exotic KVM (keyboard, video, mouse) switch for this. (A KVM switch lets you control multiple computers from a single keyboard, monitor, and mouse.) You just need to configure Windows so that its keyboard mapping matches your keyboard's physical layout. There are a couple of choices. The first is RandyRants.com's free SharpKeys 1.1 (macworld.com/0667), a Windows registry hack that makes certain keys on a keyboard act like other keys. The second is AppleK Pro's $25 Apple Keyboard driver for Windows (macworld.com/0668), a driver for Windows that supports Apple's USB keyboards (among others). □

Contributing Editor CHRISTOPHER BREEN is the editor in chief of Playlistmag.com and the author of *Secrets of the iPod and iTunes*, fifth edition (Peachpit Press, 2005).

ICON BY PAUL HOWALT

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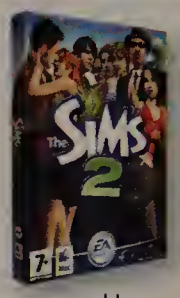

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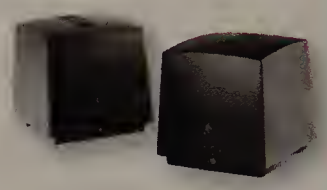

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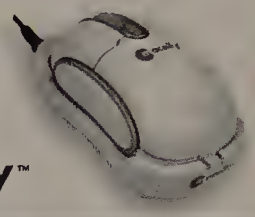

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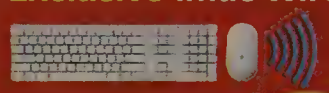

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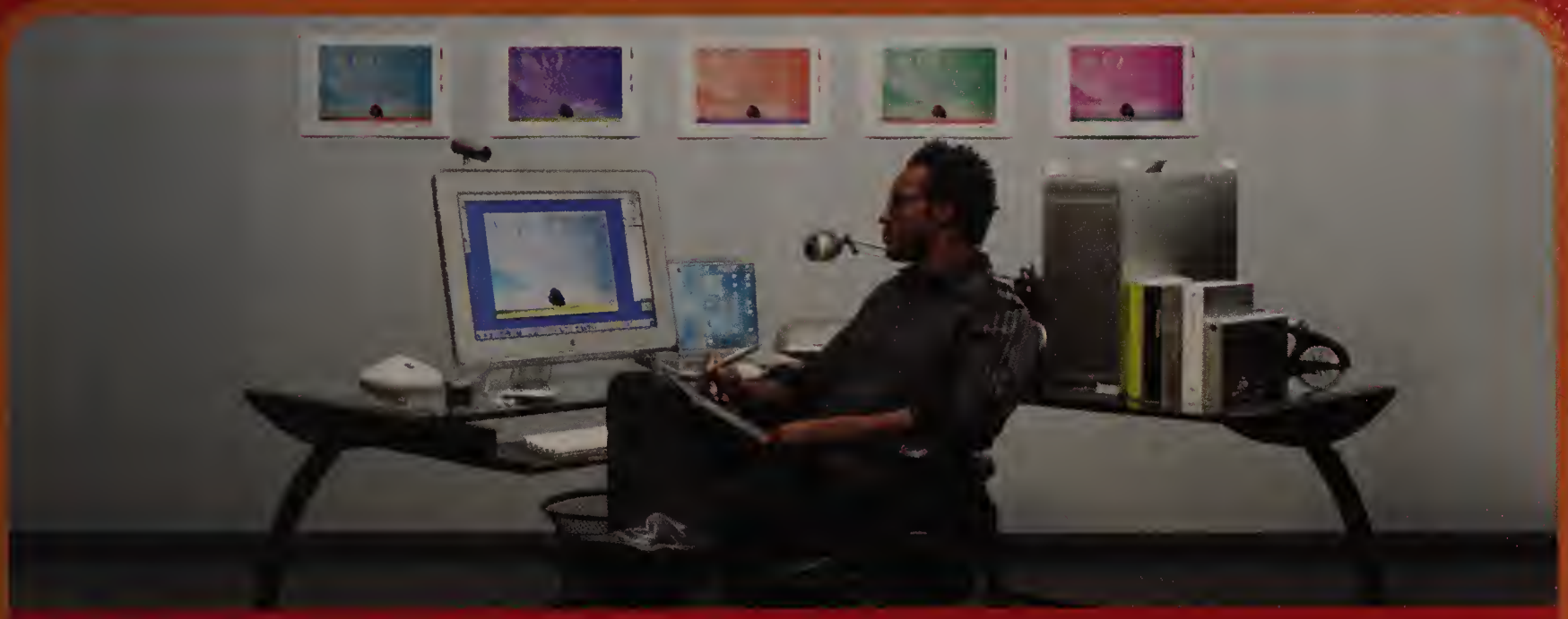

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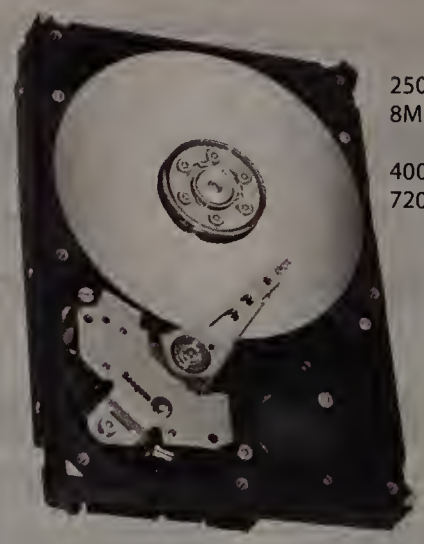

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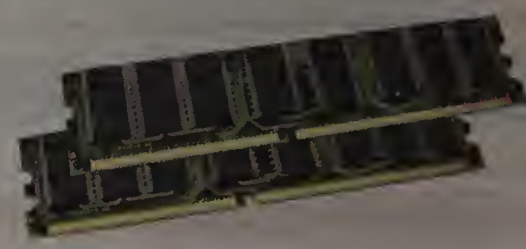

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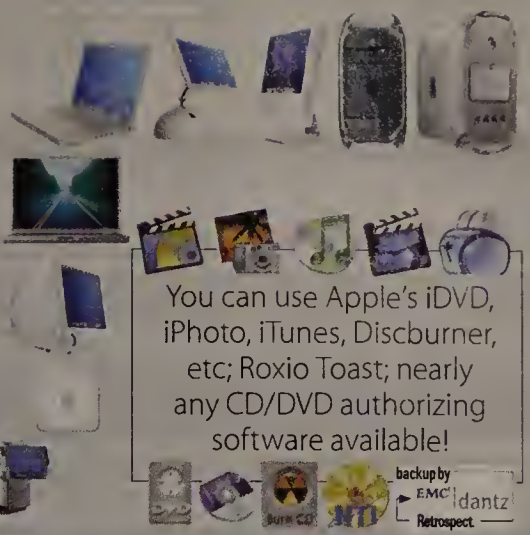

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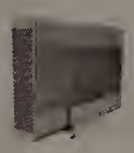

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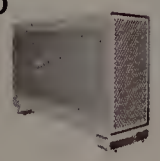

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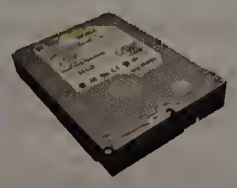

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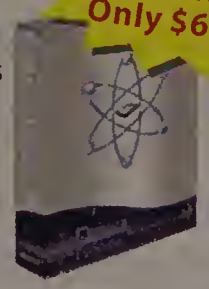

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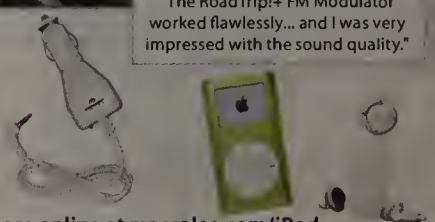

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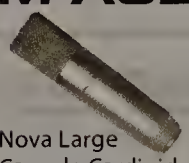

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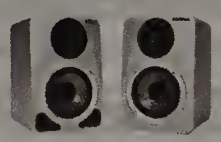

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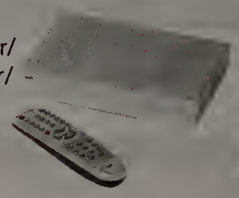

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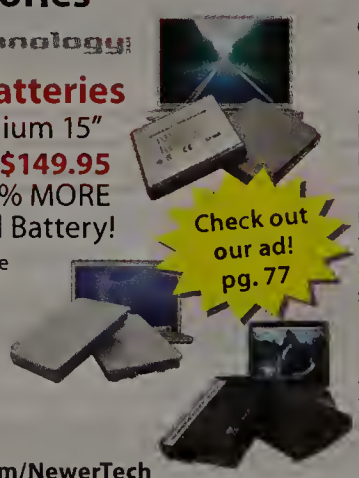

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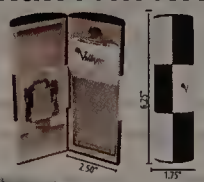

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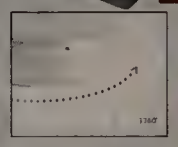

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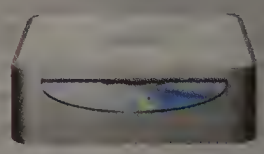

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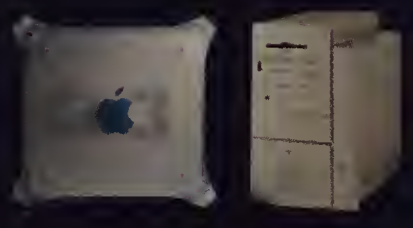

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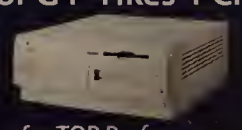

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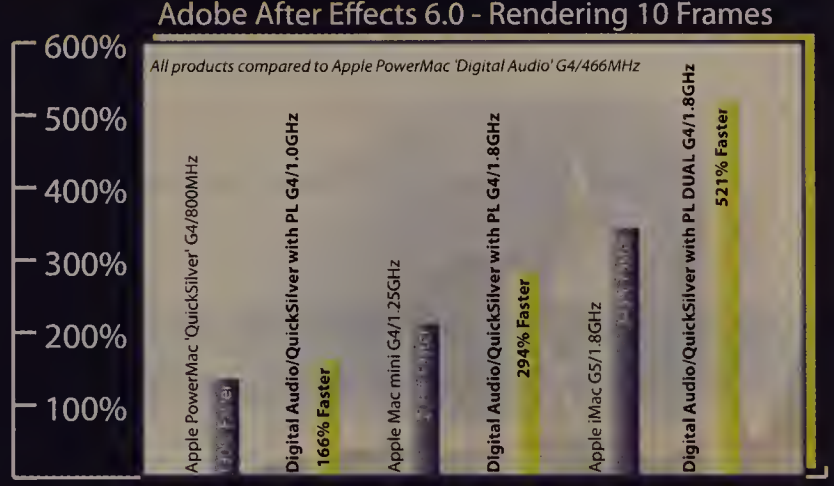

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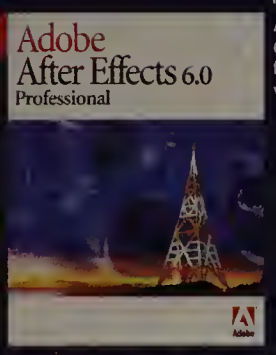

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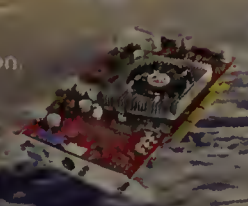

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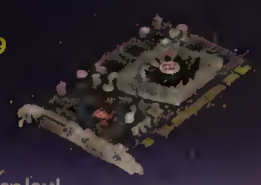

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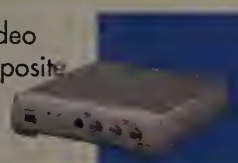

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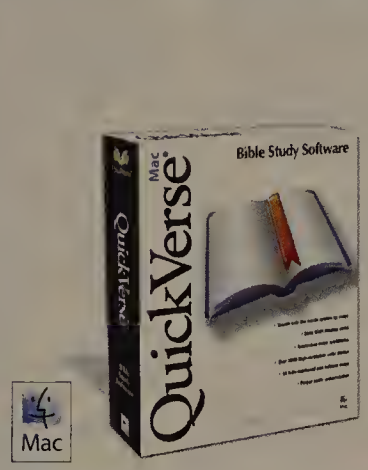

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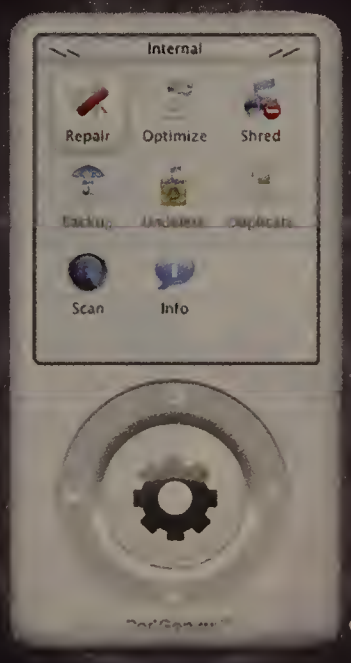

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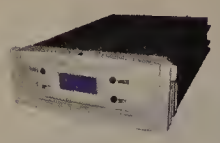

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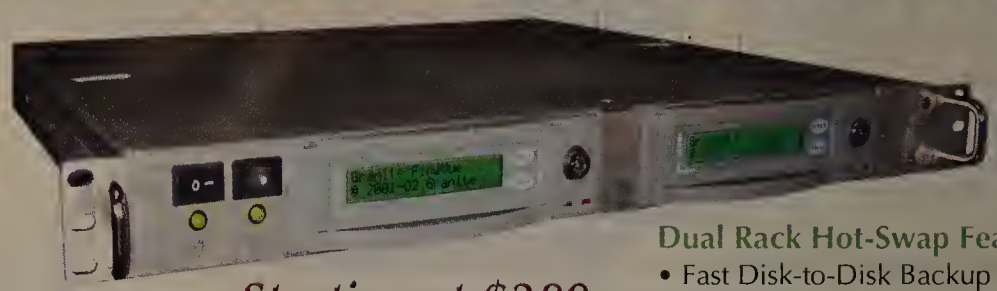

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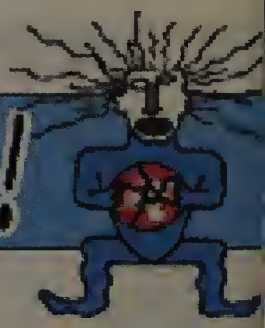

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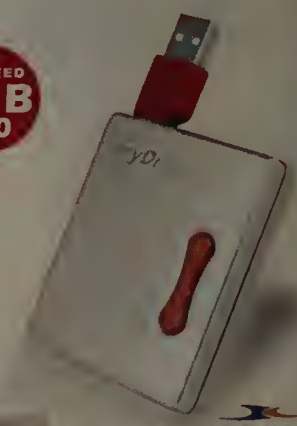

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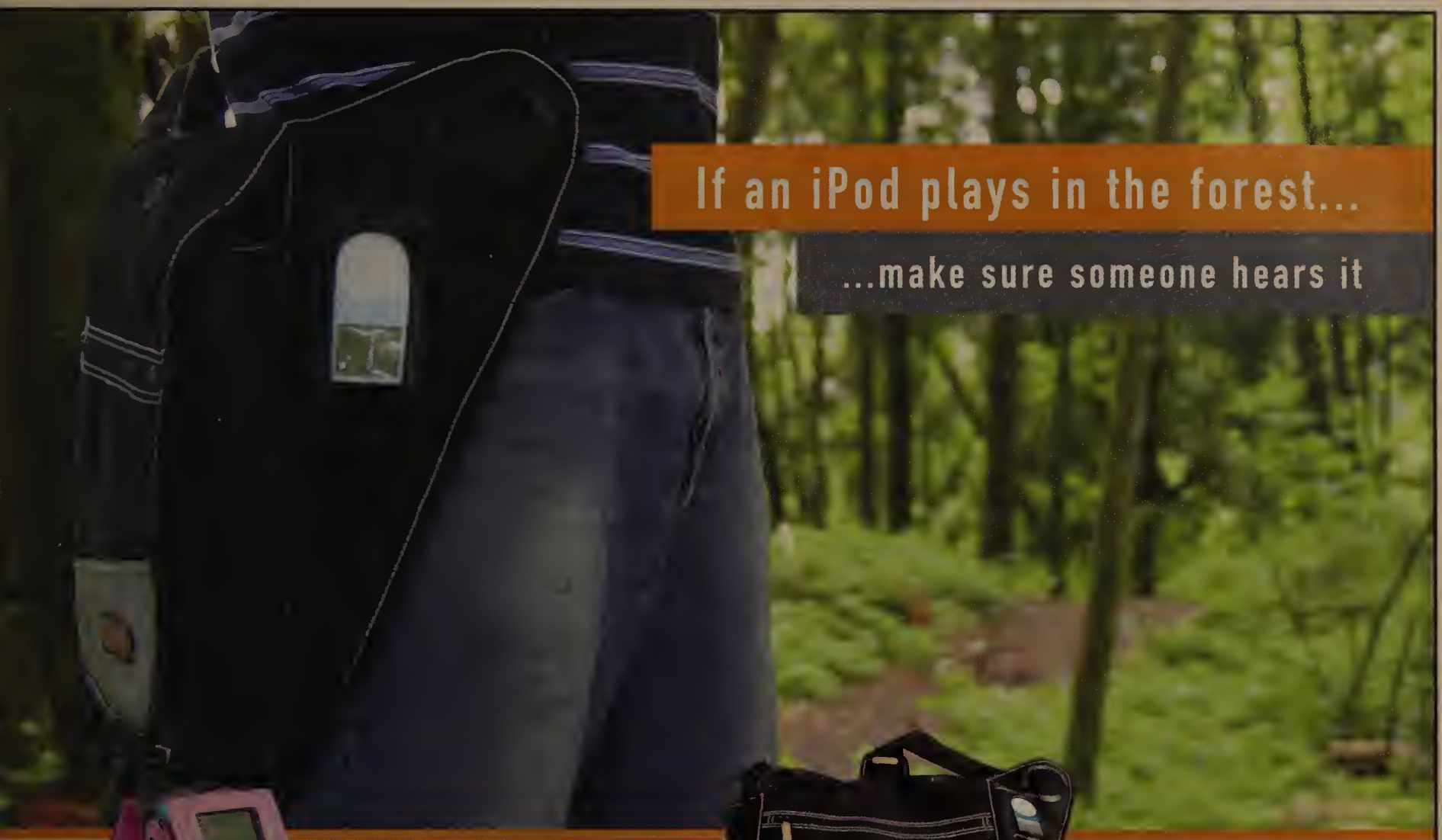

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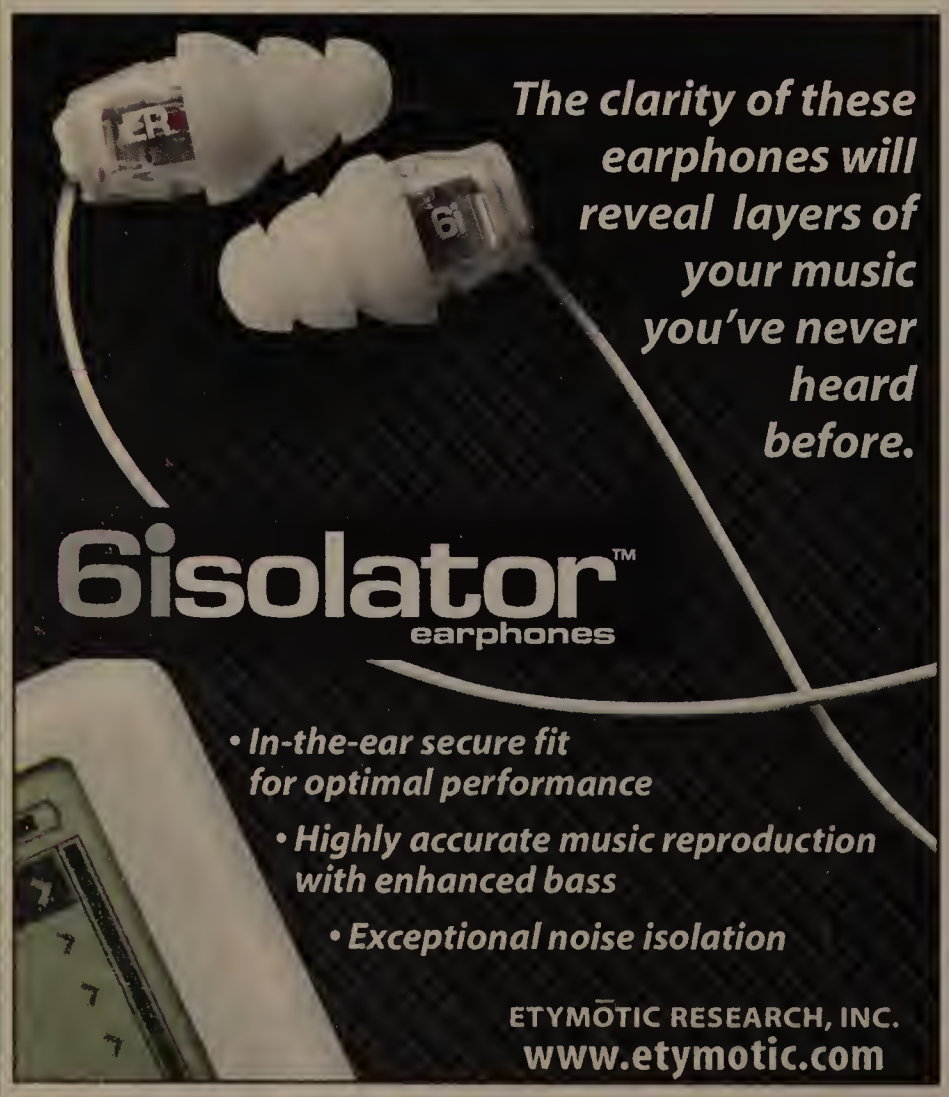

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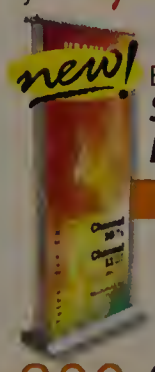

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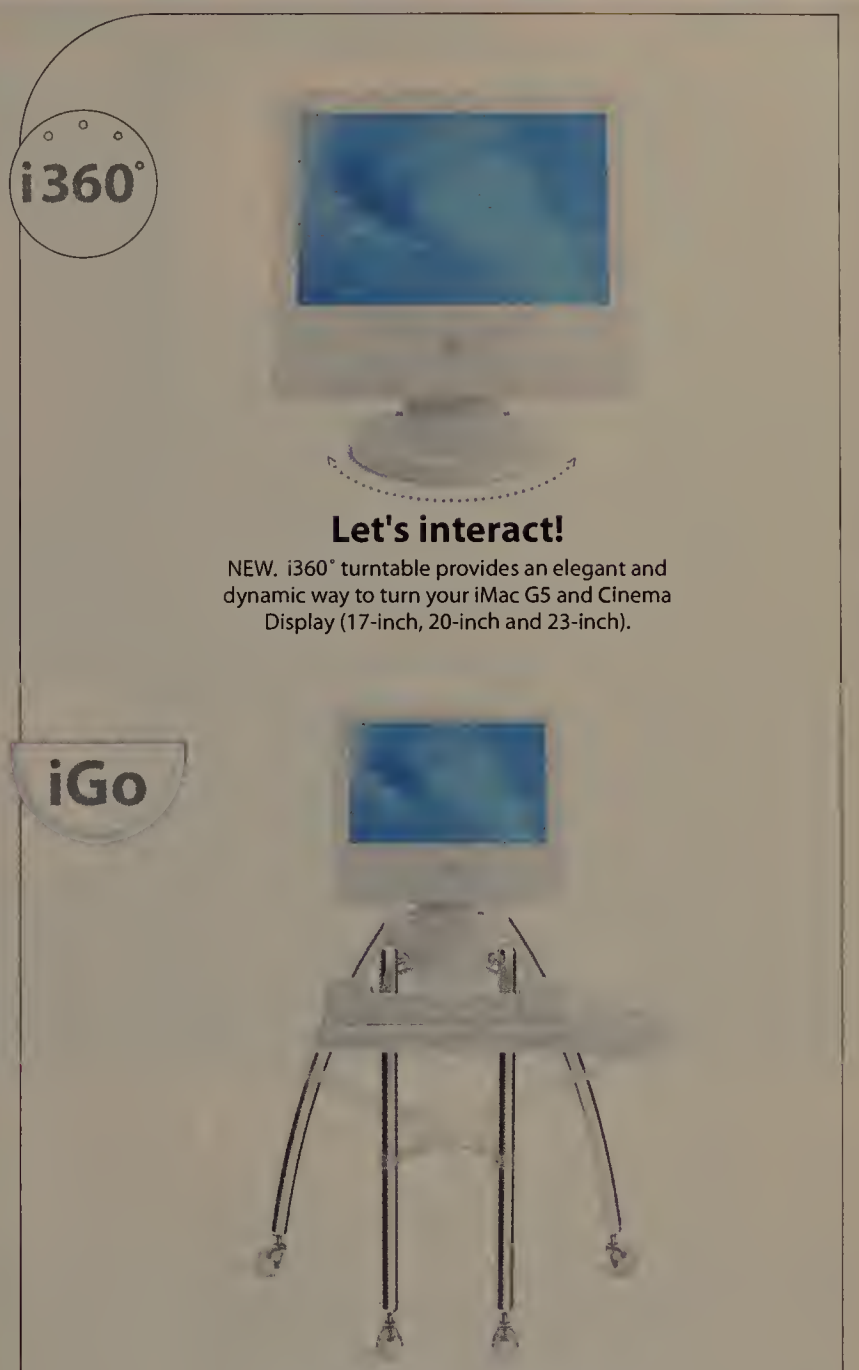

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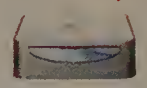

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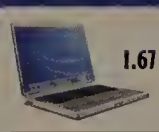

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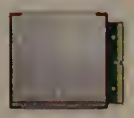

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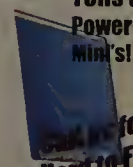

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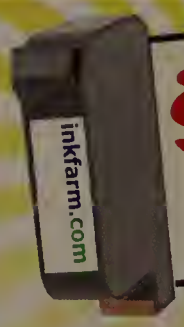

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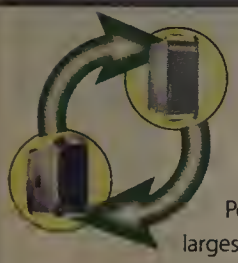

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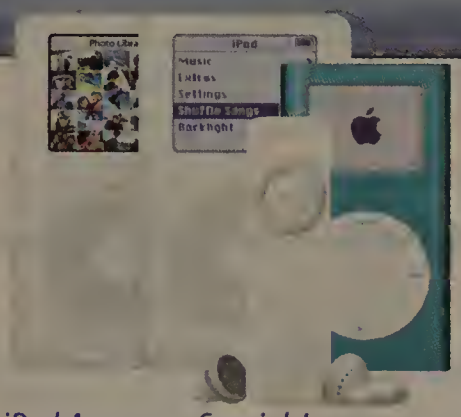

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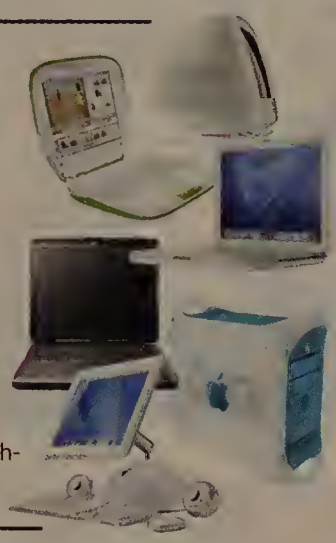

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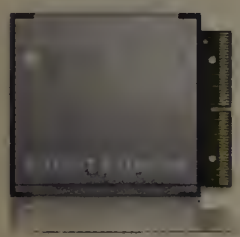

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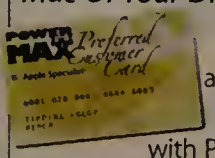

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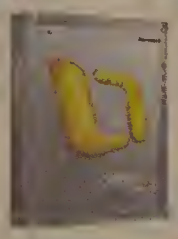

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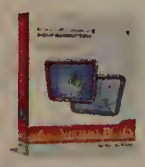

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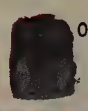

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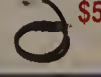

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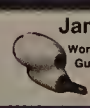

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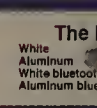

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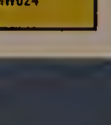

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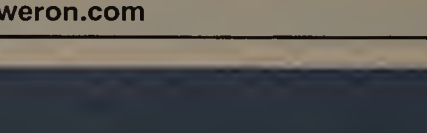

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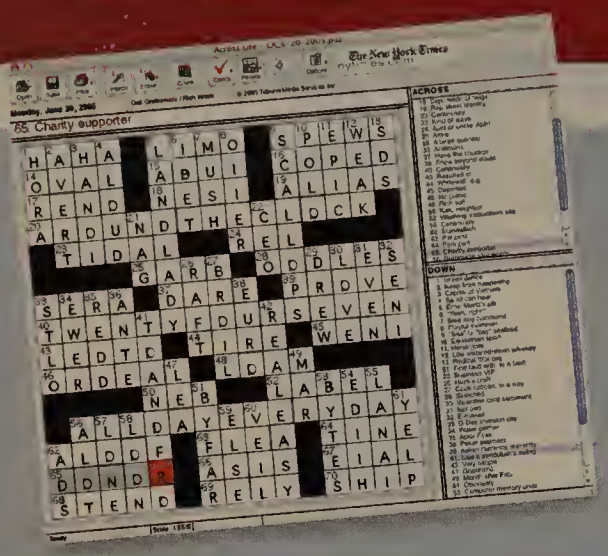
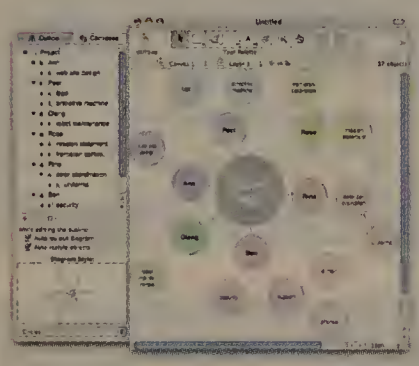


MAC CROSSWORD PUZZLES

I love the tactile sensation of filling in a blank crossword puzzle with my pencil on a folded-up section of newspaper. But sometimes—like when I don't have access to the paper—I enjoy solving puzzles on my Mac. Using Literate Software Systems' free Across Lite application (www.litsoft.com), I can solve puzzles from the *Los Angeles Times*, the *Houston Chronicle*, and more, downloaded using Dan Schellenberg's free PuzzleGetter utility (uregina.ca/~schelled). And I also subscribe to the *New York Times'* Premium Crosswords, which offers access to the paper's new and archived puzzles for $35 a year (www.nytimes.com).—JONATHAN SEFF

OmniGraffle 4

As a prolific brainstormer, I often want to make flowcharts, mind maps, matrices, and other visual representations of information. Recently, I discovered The Omni Group's OmniGraffle, the venerable diagramming and drawing application. Version 4, now in beta, has even more ways to create effective diagrams. This $80 program (Professional version, $150) is smart—no more mindless clicking to make items on the same level look the same. And the new tabbed-palette interface makes it easier to set the parameters you want (www.omnigroup.com).—JENNIFER BERGER



PictureSync

For a long time, I've printed my digital photos via an online photo-printing service. And I've recently enjoyed using Flickr to share pictures. But as a user of iView MediaPro, I can't take advantage of cool iPhoto-based uploader utilities. Fortunately, I've found Holocore's PictureSync, a clever $14 utility that not only uploads my photos, but also is smart enough to turn my iView photo tags into Flickr tags and resize my images so they don't take forever to upload (www.holocore.com).—JASON SNELL

WHAT'S HOT

Brought to you by John Moltz of the Crazy Apple Rumors Site (www.crazyapplerumors.com)

1. **Apple discontinues single-processor Power Macs.** *The company was responding to user complaints that one G5 CPU wasn't enough to heat a small apartment.*
2. **Details on Intel-based Macs reveal that Classic will no longer be supported.** *Hear that? That's the sound of a hundred StyleWriters printing angry letters to Steve Jobs.*
3. **During his commencement address at Stanford University, Steve Jobs advises graduates to "stay hungry, stay foolish."** *Given the cost of paying off a Stanford education, "staying hungry" shouldn't be a problem.*
4. **Apple announces that it's dropping the PowerPC in favor of processors from Intel.** *Yeah, we know we mentioned that last month—but we still can't believe it.*

TOURNAMENT POKER: NO LIMIT TEXAS HOLD'EM

There may come a time in the not-too-distant future when I give up this *Macworld* gig and fulfill my destiny as a high-stakes poker player. What's my secret? Tournament Poker: No Limit Texas Hold'em, from Donohoe Digital. No computer game can match the experience of staring down living, breathing opponents while deciding to go all in with a set of jacks, but the $25 (boxed, $30) Tournament Poker is an excellent place for testing out strategies, practicing game play, and calculating pot odds (www.donohoedigital.com).—PHILIP MICHAELS

OSS 3D

iTunes' Sound Enhancer feature is a handy way to add some pop to your compressed music, but its single slider doesn't offer much control. That's why I was happy to hear about Subband Technologies' $25 OSS 3D, an iTunes plug-in that uses DSP (digital signal processing) to give you bass enhancement, a virtual subwoofer, restoration of high frequencies, 3-D stereo expansion, and more. My favorite feature so far is the ability to simulate environments—these simulations perfectly mimic how music sounds over a telephone or in a closet, for example (subband.com).—JONATHAN SEFF

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